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THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION

CENTER FOR ENVIRONMENTAL HEALTH, *et al.*, *Plaintiffs*, v. ANDREW WHEELER, *et al.*, *Defendants*, and CROPLIFE AMERICA, *et al.*, *Defendant-Intervenors.*	Case No. 4:18-cv-03197-SBA **DECLARATION OF BRETT HARTL**

DECLARATION OF BRETT HARTL

I, Brett Hartl, declare as follows:

1. I am over 18 years of age, have personal knowledge of the matters asserted in this declaration and if called upon to testify would state the same.

2. I have an undergraduate degree in conservation biology from Prescott College, Arizona, and a law degree from Lewis and Clark Law School.

3. I have worked at the Center for Biological Diversity ("CBD") since 2013. From 2013 to 2016, I was CBD's Endangered Species Policy Director, and in 2017 was promoted to CBD's Government Affairs Director.

4. I have worked on the issue of endangered species consultations for pesticides since 2011, when I was a Legislative Fellow in the U.S. House of Representatives Committee on Natural Resources, which has oversight responsibilities on the Endangered Species Act. I was one of the primary staffers for the Minority for an oversight hearing on May 3, 2011, that examined the issue of endangered species consultations for pesticides. This hearing helped precipitate the request from the federal agencies to the National Academy of Sciences to study this issue and prepare recommendations for the agencies to implement. I closely followed the progress of the National Academy for the Minority staff in 2011 and provided comments on this to the Environmental Protection Agency ("EPA") in 2012 while I was the senior policy fellow at the Society for Conservation Biology. In 2013, the National Academy issued its report. National Research Council of the National Academies of Sciences, *Assessing Risks to Endangered and Threatened Species from Pesticides* (2013) ("*Academy of Sciences Report*").[1]

5. I have been deeply involved in this issue at CBD, including providing testimony to the agencies on the *Interim Approaches for National-Level Pesticide Endangered Species Act*

[1] https://www.nap.edu/catalog/18344/assessing-risks-to-endangered-and-threatened-species-from-pesticides.

Assessments Based on the Recommendations of the National Academy of Sciences April 2013 Report ("*Interim Approaches*")[2] (discussed below). I have participated in every stakeholder meeting on this issue since 2014. In my former role as Endangered Species Policy Director, I submitted over one hundred comment letters to the EPA regarding new pesticide registrations, the reregistration of pesticides, pesticide ecological risk assessments, and interim reregistration decisions. Had the EPA and U.S. Fish and Wildlife Service ("FWS") or the National Marine Fisheries Service ("NMFS") (collectively, the "Services") been complying with the Endangered Species Act ("ESA")'s consultation requirements the substantial time spent on those efforts would have been unnecessary.

6. I was also a coauthor of a peer-reviewed paper entitled *Risk management decisions for pesticides and threatened and endangered species: The role of uncertainty analysis* in HUMAN AND ECOLOGICAL RISK ASSESSMENT: AN INTERNATIONAL JOURNAL.[3]

7. I have had to allocate a great deal of resources at CBD, including my staff time and time of other staff, in monitoring, tracking, testifying, submitting comments, and communicating with government agency staff on the importance of EPA's compliance with the ESA when it registers pesticides. I estimate that over the past 5 years, I have allocated roughly 10% of my total work focus, or approximately 1000 hours, to the issue of EPA's failure to comply with the ESA's consultation requirements and promoting solutions to making these consultations a success. This allocation of my time and resources would not have been necessary if EPA was complying with the ESA because the main reason that CBD submitted comments on EPA pesticide decisions was to address the long-standing failure to comply with the ESA. Having to dedicate this amount of my time, and other staff time at CBD, has resulted in costs to

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[2] https://www.epa.gov/sites/production/files/2015-07/documents/interagency.pdf.

[3] https://www.researchgate.net/publication/282352096_Risk_Management_Decisions_for_Pesticides_and_Threatened_and_Endangered_Species_The_Role_of_Uncertainty_Analysis.

CBD. It has reduced my capacity and CBD's capacity to reduce other threats to threatened and endangered species, develop policies to strengthen protections for currently listed species, bring enforcement actions against violators of the ESA, and educate the public and decision makers about threatened and endangered species issues. As a not for profit organization with finite capacity the tremendous amount of resources that the organization has had to divert to address EPA's failure to comply with the ESA has been a drain on our organization.

8. I am generally familiar with this litigation, and in preparation for this declaration I read the declaration of Gary Frazer, ECF 38-17, filed on behalf of Defendants in this matter. I submit this declaration to address the government's responsibilities under the Endangered Species Act and how EPA's failure to comply with the ESA affects CBD and me, as a member. I am closely familiar with CBD cases relating to EPA's obligation under the ESA to address pesticides.

9. Since 2017, CBD has been compelled to submit at least a dozen Freedom of Information Act requests to obtain basic information regarding the progress — or lack thereof — in conducting ESA consultations on pesticides. Our experience since January 2017 has been that the only means of obtaining accurate information regarding pesticide consultations has been through FOIA requests, which take significant staff time to develop, and even more time to review records of. EPA has repeatedly provided information in confusing and difficult formats in responding to our FOIA requests, for example, including meaningless file titles such as "ED_001334_00000924_0_7792a2d5-eaae-476d-b5f0-ae1d8617702a.pdf" for nearly all FOIA records to slow down our review of our FOIA requests. This has drastically increased the time required to review FOIA records. I would estimate that over the past two years, review of FOIA records relating to EPA and the wildlife agencies efforts to consult on pesticides has required that 3-4 staffers at the Center have spent at least 3-5% of their total work time on review of records.

10. I am very familiar with the terms, circumstances, and results of the settlement actions that EPA has taken with respect to five pesticides — chlorpyrifos, malathion, diazinon, carbaryl, and methomyl — over the last several years regarding EPA's obligation to engage in ESA section 7 consultations related to pesticides.

11. To the best of my knowledge, with the exception of the five currently-registered pesticides listed above that have been subject to settlement agreements with CBD and other non-profit organizations, since 2013 EPA has not taken any meaningful steps towards completing a useable assessment—through the completion of a Biological Evaluation or otherwise—that would allow FWS or NMFS to evaluate the impacts of any other pesticides on endangered species.

12. CBD's 2014 legal settlement required EPA to complete five Biological Evaluations. In turn, the settlement required the FWS to complete Biological Opinions based on those Biological Evaluations. Biological Opinions from FWS for the three organophosphate pesticides (malathion, diazinon, and chlorpyrifos) were due in December 2017. Biological Opinions for the two carbamate pesticides (carbaryl and methomyl) were due in December 2018. *See* Stipulation Amending Original Stipulated Settlement and Order, *Center for Biological Diversity v. U.S. Fish & Wildlife,* No. 11-cv-5108 (N.D. Cal. July 28, 2014), (attached as Exhibit 1).

13. The 2014 settlement was premised on a good-faith effort by EPA and FWS to develop new approaches to complete nationwide consultations. Pursuant to these settlements, EPA and FWS provided CBD with non-binding benchmark dates for the completion of the draft and final Biological Evaluations. For these benchmarks, EPA stated it would attempt to complete the first three Biological Evaluations by March of 2016 and the remaining two March of 2017. *See* Tentative Milestone Dates for ESA Consultations, (attached as Exhibit 2).

14. To aid in completing these Biological Evaluations and Biological Opinions, EPA and the Services developed their *Interim Approaches for National-Level Pesticide Endangered Species Act Assessments Based on the Recommendations of the National Academy of Sciences April 2013 Report* ("*Interim Approaches*") discussed above.[4]

15. The goal of the *Interim Approaches* was to allow EPA and the Services to work together to develop new methodologies to complete the pilot consultations — as well as additional consultations — in an effective and efficient manner. The *Interim Approaches* was a "learn-as-you-go" process that was designed to allow the agencies to refine and improve the efficacy of consultations. During the past three and a half years, EPA and the Services have developed, among other things: (1) refined geospatial data of pesticide use patterns, (2) refined species distribution and range maps, (3) new models to estimate aquatic exposure to pesticides, and (4) sophisticated analyses of impacts to endangered species. Because of these advances, the EPA and the Services do not have to replicate the methods and data sets each time from scratch, and instead could apply them in any future Biological Evaluation, making future assessments potentially far more efficient. For example, once the FWS completes refined species distribution maps, those maps can be used in other assessments without having to start over.

16. At its simplest, the goal of the *Interim Approaches* was to allow EPA — with the involvement of the Services throughout the process — to produce sufficient "initiation packages" for formal consultations and then for the Services to complete consultations in a timely manner. The Services currently require[5] that each consultation package include at a minimum (1) a description of the action being considered; (2) a description of the specific area that may be affected by the action; (3) a description of any listed species or critical habitat that may be

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[4] https://www.epa.gov/sites/production/files/2015-07/documents/interagency.pdf.

[5] The Services have undertaken a rulemaking to change the existing consultation regulations found at 50 C.F.R. § 424. This declaration does not address those possible changes.

affected by the action; (4) a description of the manner in which the action may affect any listed species or critical habitat, and an analysis of any cumulative effects; (5) relevant reports or other analyses prepared on the proposal; and (6) any other relevant studies or other information available on the action.

17. Despite the progress made from 2014 to 2016 by the agencies to develop more refined methods via the *Interim Approaches*, events since 2017 have demonstrated that without a firm judicial deadline to complete consultations, any assessments of the impacts of pesticides on endangered species simply will not occur. EPA now appears to be embarking on a deliberate path to manipulate and drag-out the consultation process rather than taking meaningful action to address the impacts of pesticides on endangered species.

18. The entire *Interim Approaches* now appears to be a dead letter, after being called into question by the political leadership of the EPA. For example, on January 31, 2018, former EPA Administrator Scott Pruitt stated that: "The current Endangered Species Act pesticide consultation process is broken,"[6] and that EPA and the Services were establishing a new "interagency working group" to reassess the entire premise of nationwide consultations, including an unnecessary review of the Endangered Species Act's legal framework, case-law, and past developments. *See* Memorandum of Agreement (MOA), (attached as Exhibit 3). This working group does not appear to be a good-faith effort to improve the *Interim Approaches* and the pilot consultations, but instead is a top-down effort by political appointees to block pesticide consultations from being completed. This action by former Administrator Pruitt followed a request by several pesticide registrants, as well as CropLife America, to reconsider the *Interim Approaches*. *See* Letter from Rachel Lattimor, Senior Vice President, CropLife America, to Scott

[6] EPA Administrator Scott Pruitt Signs Endangered Species Act Memorandum with State Agriculture Commissioners (Jan. 31, 2018), https://www.epa.gov/newsreleases/epa-administrator-scott-pruitt-signs-endangered-species-act-memorandum-state.

Pruit, Administrator, EPA (April 19, 2017) (attached as Exhibit 4). These developments further underscore the inability to rely on any timetables or processes set by EPA without court-ordered schedules.

19. Even though the FWS and EPA have totally failed to meet any of the deadlines or benchmarks set forth in our good-faith settlement, the two agencies continue to refuse to provide CBD with any assurances that they will ever complete the chlorpyrifos, malathion, and diazinon Biological Opinions that were due at the end of 2017. Nor has EPA provided any indication or assurance that they will ever complete the carbaryl and methomyl Biological Evaluations. Given that EPA has not completed the Biological Evaluations for carbaryl and methomyl, which were due in 2017, it is virtually impossible to conclude that a Biological Opinion can be initiated, let alone completed, by the FWS.

20. Importantly, documents obtained via FOIA conclusively demonstrate that the Fish and Wildlife Service's draft Biological Opinions for chlorpyrifos, malathion and diazinon were nearly complete in 2017. Likewise, the Biological Evaluations for carbaryl and methomyl were also nearly complete in 2017, and that the primary reason the entire process has broken down was not due to technical or scientific challenges facing the career staff at the agencies, but instead that the process was derailed by political pressure.

21. For example, on and around April 12, 2017, career staff indicated that the draft Biological Evaluations for carbaryl and methomyl were nearly complete, and that they were preparing the final paperwork in order to send a notice to the Federal Register to announce a public comment period. *See* EPA interagency emails, (attached as Exhibit 5). Shortly thereafter, at the May 3, 2017 Pesticide Program Dialogue Committee ("PPDC") meeting, the EPA released a handout to the public, dated May 3, 2017, entitled ESA § 7 CONSULTATIONS & NEXT STEPS, which stated that the "Draft BEs for carbaryl and methomyl are expected to be released soon for 60-day public comment." *See* EPA, Endangered Species Act: Section 7 Consultations

and Next Steps (May 3, 2017), (attached as Exhibit 6). In contemporaneous remarks, former assistant director of the Environmental Fate and Effects Division, Anita Pease stated to the public "Also, EPA has completed draft BEs for carbaryl and methomyl. Those have not yet been released for public comment yet. That's all tied up in consideration of the letter that we got from industry."[7]

22. The May 3, 2017 handout entitled ESA § 7 CONSULTATIONS & NEXT STEPS also stated that "EPA expects to release the Services' draft BiOps for chlorpyrifos, diazinon, and malathion for a 60-day public comment period in late May or early June 2017 with final BiOps by December 2017." *See* Exhibit 6 at 2. FWS career staff echoed this expectation. Gina Shultz, deputy assistant director of ecological services at the Fish and Wildlife Service stated to a reporter with InsideEPA news that the draft Biological Opinions were complete and "We are in the process of trying to brief our new policy leadership team" in order to "make sure that everybody understands and is comfortable with what this is and the science." *See* Dave Reynolds, Pesticide Reviews Advance But EPA Attainment Of Court Schedule Uncertain, InsideEPA, Oct. 2, 2017, (attached as Exhibit 7).

23. Two days later, May 5, 2017, Nancy Beck, the current Deputy Assistant Administrator in the Office of Chemical Safety and Pollution Prevention appointed by President Trump, sent an email to former Administrator Pruitt's top policy advisor Samantha Dravis and says "Because we think the Services are likely to release the BiOps in the end of May, we will need to engage quickly." *See* email from Nancy Beck to Samantha Dravis (May 5, 2017), (attached as Exhibit 8).

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[7] Transcript of PPDC Meeting (May 3, 2017), at 176, https://www.epa.gov/sites/production/files/2017-07/documents/may-3-2017-ppdc-meeting-transcript.pdf

24. Similarly, on or around May 15, 2017, career staff at the Fish and Wildlife Service briefed the political leadership at Department of Interior on the draft biological opinions. Although redacted at a key point, the presentation document notes that the "preliminary draft" Biological Opinion will contain Reasonable and Prudent Alternatives — the legal requirement when a "jeopardy" finding is made in an opinion — that will include "buffers, equipment, no-spray zone/time." *See* "National Pesticide Consultations: An Overview" (attached as Exhibit 9).

25. On or around October 25, 2017, career staff at the Fish and Wildlife Service briefed Deputy Secretary David Bernhardt — who had not yet been confirmed by the Senate in May of 2017 at the time of the previously briefing — on the draft biological opinions. Records obtained via a Freedom of Information Act demonstrate that by October, 2017, the Fish and Wildlife Service had c1ompleted a draft Biological Opinion on the effects of chlorpyrifos, diazinon and malathion. The Fish and Wildlife Service had concluded at that point that 1284 threatened and endangered species are jeopardized by malathion. See Overview of the National Pesticide Biological Opinions and email transmittal, (attached as Exhibit 10). The Service had also concluded that chlorpyrifos was jeopardizing 1399 species, and diazinon was jeopardizing 175 listed species.

26. Given this fact, and based on other records obtained via the Freedom of Information Act, the draft malathion Biological Opinion almost certainly included Reasonable and Prudent Alternatives designed to avoid jeopardy to species and the destruction critical habitat. The Reasonable and Prudent Alternatives mostly likely recommended revising pesticide label language "restricting pesticide usage in localized areas; clarifying and revising label-language to eliminate areas where pesticides are not anticipated to be used (such as areas of high elevation and deserts); establishing or increasing buffers to reduce spray drift into areas where listed species may occur; [and] improving pesticide application equipment." *See* Full Communication Strategy, (attached as Exhibit 11).

27. At the November 1, 2017 PPDC meeting, Marietta Echeverria (EPA's Director of the Environmental Fate and Effects Division in the Office of Pesticide Programs), stated that EPA did not meet its May time frame and was continuing to work on the Biological Evaluations.[8] EPA has provided no further detailed information to CBD regarding when, or even if, a Biological Evaluation for carbaryl and methomyl.

28. Similarly, at the PPDC meeting on November 1, 2017, the agencies were only willing to state that the "Draft BiOPs have not yet been released for chlorpyrifos, diazinon, or malathion. Once they are released, a public comment period is expected to occur before finalization of the BiOPs."[9]

29. In 2018, the FWS requested an extension from EPA to complete the Biological Opinion for malathion until 2021. *See* FWS request for extension, (attachment as Exhibit 12). This extension does not mean that the Biological Opinion will be completed in 2021. All this ensures is that the Biological Opinion will not be completed prior to 2021, because the FWS is under no obligation to complete it under any court order. To the best of my knowledge, FWS has not requested an extension for chlorpyrifos or diazinon, but this only means that the consultations remain in limbo, it is not an indication of progress.

30. CBD's settlement with the Service was premised on a good-faith effort by the FWS and, as a result, we did not have a judicially enforceable mechanism to enforce this deadline. The past failure to adhere to proposed deadlines and refusal to agree to any enforceable deadline leaves the March 2021 timeframe essentially meaningless.

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[8] Transcript of PPDC Meeting (Nov. 1, 2017), at 78 https://www.epa.gov/sites/production/files/2018-01/documents/november-1-2017-ppdc-meeting-transcript.pdf.

[9] Transcript of PPDC Meeting (Nov. 1, 2017), at 77 https://www.epa.gov/sites/production/files/2018-01/documents/november-1-2017-ppdc-meeting-transcript.pdf.

31. Over the past four years, EPA's inaction on compliance with the ESA has compelled CBD to bring further litigation challenging five newly-registered pesticides for which EPA also failed to comply with the requirements of the ESA by initiating Section 7 consultations and ensuring against jeopardy.

32. Based on my experiences and CBD's numerous past attempts to ensure compliance, only a binding Court order with enforceable deadlines will force the EPA to comply with the Endangered Species Act. Our experiences indicate that leaving pesticides on the market during the assessment process only continues to expose endangered species to continued harm. A Court order vacating the registrations until compliance with the Endangered Species Act is the only guarantee that EPA will have the proper incentive to comply with the law. Absent that, our experience shows that compelling Endangered Species Act compliance under a court-ordered timeline with retained court jurisdiction is the only way to ensure that this crucial work is completed.

33. CBD also entered into good faith settlements with the EPA and the Services to complete nationwide consultations regarding glyphosate (the key ingredient in Roundup) and the triazine class of pesticides, which includes atrazine, simazine and propazine. We agreed to similar, non-enforceable deadlines in good faith for EPA to complete Biological Evaluations for glyphosate in 2020 and the triazine class in 2021, with the Service completing a biological opinion a year after that.

34. We agreed to these deadlines over a year after the completion of the first Biological Opinions because EPA stated it would need additional time and resources to implement mitigation measures for the first five pesticides— including label changes — and would not have the resources to do both at once. Because CBD approached these consultations in good faith, we consented to those deadlines. Even if one assumed that the Service will complete a Biological Opinion by 2021, EPA would need to spend at least one additional year to

implement them, assuming good faith on the agencies parts. This is extremely unlikely given current efforts by the political leadership at the agencies to stall the process. In essence, a process that was expected to take five years to complete will now take at least double that amount of time assuming no additional delays or interference.

35. The deliberate delays by the EPA and Service harm me personally and harm CBD's ability to fulfill its mission. One of my personal passions when not working is to view wildlife at home, around the country and around the world. I have seen over 3300 species of birds and 360 species of mammals, and regularly travel to observe wildlife, which I photograph and take video of to post online.

36. Among the endangered birds that I have observed include the whooping crane (*Grus americana*), red-cockaded woodpecker (*Picoides borealis*), Florida scrub-jay (*Aphelocoma coerulescens*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), piping plover (*Charadrius melodus*), snowy plover (*Charadrius nivosus nivosus*), interior least tern (*Sterna antillarum*), light-footed clapper rail (*Rallus longirostris levipes*), Yuma clapper rail (*Rallus longirostris yumanensis*), and endangered species in Hawaii like the Hawaiian duck (*Anas wyvilliana*), Hawaiian coot (*Fulica americana alai*), Hawaiian moorhen (Gallinula galeata sandvicensis), nene goose (*Branta sandvicensis*), and Hawaiian stilt (*Himantopus mexicanus knudseni*).

37. For example, I have seen endangered light-footed clapper rails in southern California and Yuma clapper rails along the Colorado River in the past. I visit southern California at least once a year and plan to visit habitat for the light-footed clapper rail and Yuma clapper rail in an attempt to see them. These rare marsh birds are likely harmed by pesticide spraying from nearby agriculture or other pest control activities. I am concerned by the impacts of pollution — including pesticides — and the direct and indirect impacts which are a documented threat to these species. Without consultations, these species are put at greater risk of

becoming extirpated locally — meaning they disappear from certain marshes — and harder to observe in the future.

38. I visit Hawaii at least once a year, most recently in October 2018, and plan to return there in the fall of 2019. The birds from Hawaii discussed above are all found in lowland areas including ponds and wetlands. Many of their habitats are nearby to agricultural areas or are likely exposed to pesticides from mosquito control activities. Endangered species in Hawaii face many threats, but harmful exposure to pesticides makes it harder to not only stabilize populations but precludes their recovery. I would be greatly harmed if any of these species becomes rarer or went extinct, because they are very important to me personally and I take great joy from seeing them.

39. I have also travelled to view whooping cranes on their wintering grounds on the Texas coast, most recently in in March of 2019 to take video of them. Seeing these iconic birds is always an incredible experience for me, and one of my life goals is to view all of the 15 species of cranes around the world.

40. I am very concerned that the use of pesticides in Texas for agricultural and non-agricultural uses, could dramatically impact the food supply for whooping cranes. The entire wild population of this species survives in a small area of marsh along the Texas coast, and cumulative impacts from pesticide worry me greatly given the precarious conservation status of this species. Furthermore, the migratory nature of these cranes means that they are potentially exposed to pesticides along their entire migratory route, causing further harm. The extinction of the whooping crane would directly harm my interests in seeing them in their natural habitat in the future and would be devastating to me.

41. As an organization whose mission is to protect endangered species from extinction, the Environmental Protection Agency's decades-long non-compliance with the Act harms the organization, and thousands of our members that — like me — derive enormous

satisfaction and benefit from viewing animals in the wild as part of thriving, healthy environments. CBD's mission of preserving species from extinction is frustrated by EPA's failure to consult and comply with the ESA. Like many of our members, I have professional, recreational, aesthetic, and spiritual interests in the conservation and preservation of the endangered species discussed in this declaration.

42. I do not believe that the EPA and the government's representations regarding its actions with respect to endangered species is candid, accurate, or truthful. Science and knowledge, by definition, will always be refined over time. But decision-making for endangered species, by definition, always must occur based on incomplete knowledge based on the best information known at the present to avoid extinction. The government's years of inaction continues to cause enormous harm to the environment and endangered species in particular in the meanwhile.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 25th day of March, in Prescott, Arizona.

Brett Hartl

Exhibit 1

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

Center for Biological Diversity,

Plaintiff,

v.

United States Fish and Wildlife Service et al.,

Defendants,

and,

CropLife America,

Intervenor-Defendant.

Case No. 3:11-cv-5108-JSW

Stipulation Amending Original Stipulated Settlement and [~~Proposed~~] Order

Plaintiff Center for Biological Diversity (the "Center"), Defendants the United States Fish and Wildlife Service ("FWS"), Dan Ashe, in his official capacity as Director of the Fish and Wildlife Service, the United States Environmental Protection Agency ("EPA"), and Gina McCarthy, in her official capacity as Administrator of EPA (collectively, the "Parties"), by and through the undersigned counsel, state as follows:

Whereas, the Parties entered into a stipulated settlement that resolved the remaining disputed issues in this case, and the Court entered the terms of that settlement as an order and dismissed this case without prejudice (while retaining continuing jurisdiction to enforce its order), Docket No. 76 (Nov. 4, 2013) ("Original Stipulated Settlement");

Whereas, that settlement requires FWS to complete consultation with EPA under the Endangered Species Act ("ESA") (and pursuant to the applicable regulations) on the potential effects of seven pesticides on the California red-legged frog by November of 2015, Stipulated Settlement ¶¶ 1, 2;

Whereas, EPA, the United States Department of the Interior, the United States Department of Commerce, and the United States Department of Agriculture ("USDA") had previously asked the National Academy of Sciences ("NAS") to evaluate the differing risk assessment approaches used by these agencies to identify the potential effects of pesticides on threatened and endangered species;

Whereas, the NAS responded to that request on April 30, 2013 by issuing a report entitled "Assessing Risks to Endangered and Threatened Species from Pesticides" (the "NAS report");

Whereas, the NAS report suggests, *inter alia*, that EPA, FWS, and the National Marine Fisheries Service ("NMFS") take a common approach to assessing the potential effects of pesticides on threatened and endangered species to facilitate coordination among federal agencies;

Whereas, EPA, FWS, NMFS, and the USDA are now working in close cooperation to evaluate and implement the recommendations made by the NAS report;

Whereas, based on the findings in the NAS report and the work done so far by the agencies to implement the recommendations in that report, the Parties now agree that it would be more efficient for EPA and FWS to consult on the potential effects that pesticides at issue in this case have on threatened and endangered species nationwide, instead of limiting their consultation only to potential effects on the California red-legged frog;

Whereas, EPA and FWS are working to complete such nationwide consultations on five (5) of the pesticides at issue in this case as part of the nationwide endangered species assessments that EPA will be conducting in connection with registration review under the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA");

Whereas, those five (5) pesticides are carbaryl, chlorpyrifos, diazinon, malathion, and methomyl;

Whereas, EPA and FWS currently expect to complete nationwide ESA consultations for three (3) of the five pesticides listed above by December 31, 2017 and for the remaining two (2) pesticides by December 31, 2018;

Whereas, the Parties agree that it would be more efficient to conduct nationwide consultations, instead of consultations limited to the California red-legged frog, but the agencies still face significant challenges in implementing the recommendations of the NAS report and completing such nationwide consultations;

Whereas, the Parties have now devised this stipulation to amend the Original Stipulated Settlement so that FWS will have an opportunity to attempt to complete the nationwide consultations described above, but which will still require FWS to complete the original consultations on the California red-legged frog if it is not able to complete nationwide consultations (although the schedule for such California red-legged frog consultations would be extended);

Whereas, the Parties reserved the right to ask this Court to modify the Original Stipulated Settlement "because of the Service's ongoing actions to comply with the ESA, to meet the requirements of other federal agencies or departments, or to deal with circumstances not presently anticipated."

Stipulated Settlement ¶ 5; and,

Whereas, Intervenor-Defendant CropLife America takes no position on the relief sought by this stipulation;

Now, therefore, the Parties stipulate to amend the Original Stipulated Settlement as follows:

1. The consultation schedule set out in paragraph 2 of the Original Stipulated Settlement is hereby suspended to allow the Federal agencies to engage in the nationwide consultations described above in the "whereas" clauses.

2. No provision of this Stipulation requires (or shall be construed to require) FWS or EPA to conduct the nationwide consultations described above in the "whereas" clauses, and no provision of this Stipulation requires (or shall be construed to require) FWS or EPA to complete any such nationwide consultations on the schedule set out above in the "whereas" clauses.

3. While it is not obligated to do so, if FWS completes nationwide consultations on the effects of the five (5) pesticides listed above on the schedule set out above in the "whereas" clauses, then FWS shall be deemed to have discharged its obligations under the terms of the Original Stipulated Settlement in full.

4. Alternatively, if:

(a) FWS does not complete nationwide consultations on the five (5) pesticides listed above on the schedule set out above in the "whereas" clauses;

(b) FWS concludes (based on further review of these issues) that nationwide consultations are no longer appropriate; or,

(c) FWS does not complete the interim benchmarks on the

estimated schedule described below in Paragraph 5,

then:

(1) at the request of either the Center or the Federal Defendants, the Parties shall meet and confer at the earliest available opportunity to discuss whether it is appropriate for FWS to complete the consultations "on the potential effects of seven pesticides on the California red-legged frog" described in Paragraph 1 of the Original Stipulated Settlement and, if so, to discuss an appropriate revised schedule for those consultations based on the schedule set out in Paragraph 2 of the Original Stipulated Settlement; and,

(2) if the Parties are unable to reach agreement on that revised schedule within thirty (30) days of any such meeting and conference, either party may petition the Court to resolve the dispute and set a schedule for the remaining consultations "on the potential effects of seven pesticides on the California red-legged frog" described in Paragraph 1 of the Original Stipulated Settlement.

5. Within 30 days of the Court's approval of the Amended Stipulated Settlement, FWS and EPA shall provide the Center (and Intervenor-Defendant) with an estimated schedule, including interim benchmarks, for completing the nationwide consultations described above in the "whereas" clauses. That schedule will include estimated dates for EPA's preliminary risk assessments (which include the draft biological evaluation ("BE")), EPA's submittal of the BE to FWS, FWS's draft biological opinions, and FWS's final biological opinions for each of these pesticides. The parties recognize that this schedule will be a good faith estimate as of the date that it is provided, but that the schedule may be subject to change (based on factors including, but not limited to, variations in the estimated dates for data

submission, the volume of public comments, and unanticipated legal obligations), and that, as stated above in Paragraph 2, this schedule will not be binding or enforceable by the Court.

6. FWS shall provide the Center (and Intervenor-Defendant) with an update by conference call every four (4) months describing the status of these consultations.

7. Within 30 days of the Court's approval of the amended Stipulated Settlement, FWS shall issue a press release that alerts the public to the amended Stipulated Settlement and shall make the following modifications to the webpage created pursuant to the first paragraph in Section 3 ("Web-site Content") of the Original Stipulated Settlement: i) summarize the principal terms of this amended Stipulated Settlement; and ii) include a hyperlink to the full text of this amended Stipulated Settlement. As for the webpage created pursuant to the second paragraph in Section 3 ("Web-site Content") of the Original Stipulated Settlement, FWS shall work with EPA to include on an appropriate, easily accessible Federal government website publicly-available documents associated with the nationwide consultation processes for the pesticides that are the subject of this stipulation, as well as the pesticides that are subject to this case, including preliminary risk assessments, biological evaluations, draft biological opinions, and proposed decisions that are subject to public comment. The webpage shall post the documents or links to websites containing the documents within 14 days of the date they become publicly available.

8. The first and second sentences of Paragraph 15 of the Original Stipulated Settlement are amended to read, in their entirety: "Upon entry of this Stipulated Settlement, Plaintiff's complaint shall be dismissed without prejudice. Plaintiff resolves its Complaint as to the five active ingredients

carbaryl, chlorpyrifos, diazinon, malathion, and methomyl, but Plaintiff reserves the right to bring a new Complaint regarding the 59 other active ingredients." This Stipulation does not amend the third sentence of Paragraph 15 of the Original Stipulated Settlement, which remains in effect.

9. Provisions of the Original Stipulated Settlement that are not directly amended by this Stipulated Settlement shall remain in effect.

10. This Stipulation has no precedential value and shall not be used as evidence in litigation or in any other context.

PURSUANT TO STIPULATION, IT IS ORDERED that the Settlement executed by the Parties is hereby incorporated into this Order; and

IT IS FURTHER ORDERED that this Court shall have continuing jurisdiction to enforce this Order and the terms of the Settlement herein consistent with the terms of that agreement; and

IT IS FURTHER ORDERED that this case is hereby **DISMISSED** without prejudice.

Dated: July 28, 2014

Jeffrey S. White
United States District Judge

Respectfully submitted July 25, 2014,

SAM HIRSCH,

Acting Assistant Attorney General
United States Department of Justice
Environment & Natural Resources Division

SETH M. BARSKY, Section Chief
S. JAY GOVINDAN, Assistant Section Chief

/s/ James A. Maysonett

JAMES A. MAYSONETT, Senior Trial Attorney

Wildlife & Marine Resources Section
P.O. Box 7611, Washington D.C. 20044
(202) 305-0216, facsimile (202) 305-0275
james.a.maysonett@usdoj.gov

COUNSEL FOR FEDERAL DEFENDANTS

/s/ Collette Adkins Giese

COLLETTE ADKINS GIESE (MN Bar # 035059X)
JUSTIN AUGUSTINE (CA Bar # 235561)

CENTER FOR BIOLOGICAL DIVERSITY
351 California Street, Suite 600
San Francisco, CA 94104
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Facsimile: (415) 436-9683
jaugustine@biologicaldiversity.org
cadkinsgiese@biologicaldiversity.org

ATTORNEYS FOR PLAINTIFF

Exhibit 2

Tentative Milestone Dates for ESA Consultations

Pesticide Active Ingredient	Registration Review Docket Opening	Date of Data Call-In Notice	Start of Comment Period on Preliminary Risk Assessment	BE Submitted to Services	Draft BiOp Available for Public Comment	Issuance of Final BiOp
EPA, FWS, and NOAA Fisheries – Nationwide Consultation						
Carbaryl	September 2010	October 2011	August 2016	March 2017	May 2018	December 2018
Chlorpyrifos	March 2009	September 2010	August 2015	March 2016	May 2017	December 2017
Diazinon	June 2008	December 2009	August 2015	March 2016	May 2017	December 2017
Malathion	June 2009	August 2010	August 2015	March 2016	May 2017	December 2017
Methomyl	September 2010	November 2011	August 2016	March 2017	May 2018	December 2018

Exhibit 3

MEMORANDUM OF AGREEMENT

between

the Environmental Protection Agency, the Department of the Interior, and the Department of Commerce

on

Establishment of an Interagency Working Group to Coordinate Endangered Species Act Consultations for Pesticide Registrations and Registration Review

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I. PURPOSE

This Memorandum of Agreement (MOA) establishes an interagency working group ("Working Group") comprised of representatives from the Environmental Protection Agency (EPA), the Department of the Interior (DOI), which includes the Fish and Wildlife Service (FWS), and the Department of Commerce (DOC), which includes the National Marine Fisheries Service (NMFS) (collectively, "the Signatory Agencies"). The Working Group will provide recommendations to EPA, FWS, and NMFS leadership on improving the Endangered Species Act (ESA)[1] consultation process for pesticide registration and registration review ("pesticide consultation process") and will ensure that the new process is recorded and formalized as appropriate.

II. BACKGROUND

Statutory Framework and Pending Reviews

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)[2] governs pesticide registration, distribution, and use. EPA implements FIFRA, while consulting with the Department of Agriculture (USDA) on pesticide-related rulemakings. Most pesticides distributed or sold in the United States must obtain a registration from EPA prior to their use. FIFRA additionally requires that EPA review pesticide registrations every 15 years. As of July 1, 2017, EPA has been processing 725 registration review cases that cover approximately 1,140 pesticide active ingredients.

The ESA seeks to conserve threatened and endangered species and the ecosystems upon which they depend. Pursuant to ESA section 7(a)(2), federal agencies shall "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence" of any listed species or result in adverse modification of critical habitat.[3] Section 7(a)(2) further requires agencies to consult with FWS, NMFS, or both (collectively, "the Services") when contemplating an agency action subject to ESA. Courts have found specific

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[1] 16 U.S.C. § 1531 *et seq.*
[2] 7 U.S.C. § 136 *et seq.*
[3] 16 U.S.C. § 1536(a)(2).

registrations and registration reviews of pesticides under FIFRA to be agency actions subject to ESA's consultation requirements.

Status of Pesticide Consultations

America's 3.2 million farmers operate over 2 million farms and annually produce billions of pounds of food. Responsible pesticide use is an essential tool for managing America's estimated 915 million acres of farmland. At the same time, pesticides may impact non-target organisms, including fish and wildlife.

For decades, EPA and the Services have worked to determine how best to fulfill ESA's consultation requirements when registering and reregistering pesticides:

- Initially, EPA and FWS conducted ESA consultations on individual pesticides but ended this practice after it was deemed too lengthy and ineffective in protecting listed species.[4]
- In 1981, EPA in cooperation with FWS adopted a "cluster" approach pursuant to which all pesticides registered for the same use pattern were examined concurrently. At that time, EPA received biological opinions from the Services for four clusters and began drafting implementation plans for the biological opinions. However, the implementation plans proved to be unworkable because they were "far more complex and time-consuming than originally anticipated," and as a result, the cluster approach was abandoned in 1998.[5]
- In 1989, after collaboration among EPA, the Services, and USDA, and the conclusion of a notice-and-comment period, the agencies published a revised Endangered Species Protection Plan and returned to species-based assessments. Under this approach, EPA identified species most vulnerable to pesticides, the Services identified the counties where those species lived, and USDA provided information on crop growth and pesticide application.
- In 2001, a non-government organization successfully challenged EPA's failure to consult with NMFS on 54 pesticide active ingredients and their effect on 25 listed species of salmon and steelhead.[6] Partially in response to this challenge, in 2004, EPA and the Services issued counterpart regulations, which created a number of different procedures to conduct informal and formal ESA pesticide consultations.[7] The implementation of one such procedure for informal consultation, the alternative consultation procedure, was challenged and, in 2006, held to be arbitrary and capricious.[8]

In an effort to address issues between federal agencies related to identifying and implementing appropriate scientific and technical approaches, EPA, the Services, and USDA requested the

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[4] ENVIRONMENTAL PROTECTION AGENCY, REPORT TO CONGRESS ON THE ENDANGERED SPECIES PROTECTION PROGRAM AS IT RELATES TO PESTICIDE REGULATORY ACTIVITIES, at 6 (1991), *available here*.
[5] *Id.* at 8.
[6] Wash. Toxics Coal. v. EPA, 413 F.3d 1024 (9th Cir. 2005), *cert. denied*, 546 U.S. 1090 (2006).
[7] 50 C.F.R. § 402.40-48 (2016).
[8] Wash. Toxics Coal. v. United States Dep't of the Interior, 457 F. Supp. 2d 1158 (W.D. Wash. 2006).

National Research Council (NRC) "to examine scientific and technical issues related to determining risks posed to listed species by pesticides."[9] In 2013, the NRC released a report that identified categories of issues the agencies should seek to resolve and strategies to improve interagency coordination. As a result of the NRC report, EPA and the Services developed and are implementing a set of "interim agreements" and a "stakeholder engagement process."

The pesticide consultation process that has evolved since the NRC report remains highly challenging. For example, although EPA is required to complete registration review of more than 700 cases by 2022, it has taken EPA and the Services several years to address the three active ingredients in the first pesticides covered using the most recent approach. This experience has shown that the NRC report did not foresee the challenges associated with implementing its recommendations in view of the statutory requirements and associated regulations that the EPA and the Services must follow. In addition, the pesticide consultation process continues to be subject to litigation and various consent decrees.

III. ACTIONS

Creation of Interagency Working Group

This MOA establishes a Working Group to support EPA and the Services in meeting their obligations related to the pesticide consultation process. The Working Group shall consist of the Signatory Agencies to this memorandum. In addition, the Signatory Agencies request that USDA, the Council on Environmental Quality (CEQ), and the Office of Management and Budget (OMB) join the Working Group, and that CEQ serve as Chair of the Working Group. The Signatory Agencies may also request the participation of other federal agencies or offices in the Working Group as appropriate.

Action Plan

Federal agency coordination and support is necessary to meet ESA obligations with regard to pesticide consultations. The Working Group will (1) outline a legal and regulatory framework by analyzing the relevant statutes, regulations, and case law, (2) review past pesticide consultation practices to learn from those experiences, (3) develop scientific and policy approaches that will increase the accuracy and timeliness of the pesticide consultation process, and (4) memorialize the proposed approach through a memorandum of understanding, revised regulations, or another legal mechanism:

1. ***Analyze relevant statutes, regulations, and case law.*** The Working Group will review (1) the statutory requirements under ESA and FIFRA, (2) the case law that has developed on the intersection of ESA and FIFRA, and (3) existing regulations for the pesticide consultation process. For example, the Working Group will review 50 C.F.R. § 402.46-47 (the optional formal consultation procedure) and determine whether its application would improve the pesticide consultation process. The Working Group should also provide advice on how best to define the scope of the agency action subject to consultation, and on how to properly identify and classify direct and indirect effects of

[9] ASSESSING RISKS TO ENDANGERED AND THREATENED SPECIES FROM PESTICIDES, at 3 (2013) available here.

the agency action. The Working Group will identify statutory obligations and limitations, providing a legal and regulatory framework to guide the Working Group as it develops its scientific and policy recommendations for the pesticide consultation process.

2. ***Review past ESA pesticide consultation practices to learn lessons from recent experience.*** The Working Group will review current and previous pesticide consultation practices to identify problems and areas for improvement, as well as best practices that should be used in future pesticide consultations.

3. ***Prepare recommendations to improve scientific and policy approaches.*** The Working Group will provide recommendations on how to improve scientific and policy approaches to ESA pesticide consultations. For example, the Working Group will develop a streamlined process for identifying which actions require no consultation, informal consultation, or formal consultation. The Working Group will also help provide clarity as to what constitutes the "best scientific and commercial data available" in the fields of pesticide use and ecological risk assessment, which EPA and the Services are required to use under ESA section 7(a)(2).

4. ***Document the approach.*** To the extent that current authorities and practices do not allow for the timely and accurate review of pesticides consistent with governing authorities, the Working Group may memorialize its recommendations for a revised regulatory framework, including addressing agency responsibilities, recommended technical approaches, and recommendations for new regulations, a memorandum of understanding, or other appropriate documentation. Documenting the new approaches would promote lasting cooperation between the agencies.

IV. OTHER PROVISIONS

1. ***Period of Agreement.*** The term of this MOA will commence upon full execution by the Signatory Agencies, and shall remain in effect until such time as the MOA is terminated by any Signatory Agency or its successor.

2. ***Modification.*** This MOA, or subsequent annexes, may only be modified by mutual agreement of the Signatory Agencies or their successors. Such modifications shall be in writing and will take effect upon execution by the Signatory Agencies or their successors.

3. ***Rights and Benefits.*** Nothing in this MOA is intended to diminish or otherwise affect the authority of any agency to carry out its statutory, regulatory, or other official functions, nor does it create any right or benefit, substantive or procedural, enforceable at law by any party against the United States, its agencies or officers, State agencies or officers carrying out programs authorized under Federal law, or any other person.

4. ***Agreement Does Not Involve Funding.*** This MOA, in and of itself, does not result in the transfer of funds or other financial obligations between the Signatory Agencies. No provision of this MOA shall be interpreted to require obligation or payment of funds in

violation of the Anti-Deficiency Act, 31 U.S.C. § 1341. Funding arrangements, if any, shall be the subject of separate agreements that will be subject to the availability of funds.

5. ***Stakeholder Input.*** In carrying out Section III of the MOA, the Working Group is not prohibited from seeking or receiving stakeholder expertise, experience, input, information, or other items deemed appropriate, consistent with the requirements of the Federal Advisory Committee Act (FACA).

V. SIGNATORIES

Date: 1/31/2018

Ryan K. Zinke
Secretary
U.S. Department of the Interior

Date: JAN 31 2018

Wilbur Ross
Secretary
U.S. Department of Commerce

Date: 1/31/2018

Scott Pruitt
Administrator
U.S. Environmental Protection Agency

Exhibit 4

CropLife AMERICA

April 19, 2017

The Honorable Scott Pruitt
Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

The Honorable Ryan Zinke
Secretary
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

The Honorable Wilbur Ross
Secretary
U.S. Department of Commerce
1401 Constitution Avenue, NW
Washington, DC 20230

Via E-mail

Re: OP Registrants' Request That Services Return Biological Evaluations to EPA

Dear Administrator Pruitt, Secretary Zinke and Secretary Ross:

CropLife America (CLA) writes in support of the requests from our members Dow AgroSciences, LLC, FMC Corporation, and Makhteshim Agan of North America, Inc. (d/b/a ADAMA) that the Environmental Protection Agency (EPA) withdraw from the National Marine Fisheries Services and U.S. Fish & Wildlife Services three organophosphate (OP) "biological evaluations" (BEs) that EPA sent to the Services on January 18, 2017. We understand that request was filed on April 13.

Established in 1933, CLA represents the developers, manufacturers, formulators and distributors of plant science solutions for agriculture and pest management in the United States. CLA's member companies produce, sell and distribute virtually all the vital and necessary crop protection and biotechnology products used by farmers, ranchers and landowners. Crop protection products are necessary to ensure safe, predictable and adequate supplies of food, fiber, and fuel. CLA members support science based regulation of pesticides to ensure that these

products can be used without causing unreasonable adverse effects to either human health or the environment, including threatened and endangered species.

The case for the withdrawal of the BEs, and for the related actions the registrants have requested, is compelling. As the registrants have explained, the analysis the BEs present does not represent "the best scientific and commercial data available" that the Endangered Species Act (ESA) requires.

Equally important from CLA's perspective, taking the requested actions will help to assure that EPA and the Services have adequate time to reconsider the "interim approaches" that preparation of the BEs have tested. It is time to call a halt to further efforts to implement those "interim approaches" and work together towards a sustainable approach to our common concerns.

The "interim approaches" were developed by the prior Administration as a purported test of the recommendations of the 2013 report of the National Academy of Sciences ("NAS") *Assessing Risks to Endangered and Threatened Species from Pesticides*. But as applied to these BEs, the approaches ignored many of the NAS's recommendations and were flawed from the start.

The interim approaches have failed to provide a meaningful path towards a tiered risk assessment that will lead to an efficient, effective means to fulfill EPA's statutory obligations. Instead, they have created a process that does not screen and does not meaningfully assess risk, but instead threatens to remove from use valuable tools needed for production agriculture and public health, all while diverting resources away from more meaningful efforts towards species protection.

The initial release of the draft BEs confirmed these flaws, as many commenters (including CLA) told EPA. Yet, rather than responding to those comments and fundamentally revisiting the drafts (or the propriety of those approaches), two days before the prior Administration left office, EPA sent final versions of the BEs to the Services.

There likely are few better examples than this situation of the illogical and wasteful regulatory approaches that President Trump has committed to reform. The actions requested by the three OP registrants thus will not only allow these products to be evaluated under a far more appropriate regulatory approach, but demonstrate the seriousness of the Administration's commitments. CLA and its member companies continue to advocate for an ESA review process that works towards protecting species from potential adverse effects of agricultural operations.

Sincerely,

Rachel G. Lattimore

Rachel G. Lattimore
Senior Vice President,
General Counsel and Secretary

Representing the Crop Protection Industry
1156 15th St. N.W., Suite 400 Washington, D.C. 20005 · 202.296.1585 phone 202.463.0474 fax
www.croplifeamerica.org

cc:
Mr. Ray Starling, Special Assistant to the President for Agriculture,
Trade and Food Assistance
Dr. Sheryl H. Kunickis, Director, Office of Pest Management Policy,
United States Department of Agriculture
Mr. Richard P. Keigwin, Jr., Acting Director, Office of Pesticide Programs,
Environmental Protection Agency

Representing the Crop Protection Industry
1156 15th St. N.W., Suite 400 Washington, D.C. 20005 · 202.296.1585 phone 202.463.0474 fax
www.croplifeamerica.org

Exhibit 5

To: Jakob, Avivah[Jakob.Avivah@epa.gov]
From: Perry, Tracy
Sent: Wed 4/12/2017 4:22:56 PM
Subject: FW: Typeset FR Document Ready for Signature Package (17P-0055; FRL-9960-24)
17P-0055 version dated 4.5.17 final for signature.docx

Avivah – here the final version of the carbaryl/methomyl BE FR – it was signed by Yu-Ting.

From: Nguyen, Khue
Sent: Thursday, April 06, 2017 11:06 AM
To: Travers, Mary-F <travers.mary-f@epa.gov>
Cc: Perry, Tracy <Perry.Tracy@epa.gov>; Grable, Melissa <Grable.Melissa@epa.gov>
Subject: RE: Typeset FR Document Ready for Signature Package (17P-0055; FRL-9960-24)

Hi Mary,

There were minor editorial edits to this FR from a couple of the managers. We are sending the revised encoded version—this is the version that was signed this morning by our DD.

The signed version will be sent over to RCS today, with the typesetting request form, docket verification, and action information form.

Thanks,

Khue Nguyen

Chemical Review Manager

Risk Management and Implementation Branch 1

Pesticide Re-evaluation Division

Office of Pesticide Programs, EPA

703-347-0248

Nguyen.khue@epa.gov

From: Travers, Mary-F
Sent: Thursday, March 30, 2017 2:36 PM
To: Nguyen, Khue <Nguyen.Khue@epa.gov>; Grable, Melissa <Grable.Melissa@epa.gov>; Perry, Tracy <Perry.Tracy@epa.gov>; Walsh, Linsey <Walsh.Linsey@epa.gov>
Cc: Hofmann, Angela <Hofmann.Angela@epa.gov>; Lanier, Minnie <Lanier.Minnie@epa.gov>; Green, Teresa <Green.Teresa@epa.gov>; Pastor, Justo <Pastor.Justo@epa.gov>
Subject: FW: Typeset FR Document Ready for Signature Package (17P-0055; FRL-9960-24)

Hi Khue,

Great job!!! If you need to make any other changes, follow the same procedure that we discussed earlier today, and everything looks just fine!

Mary F. Travers

Regulatory Coordination Staff (7101M)

Office of Chemical Safety and Pollution Prevention

United States Environmental Protection Agency

202 566-1588 (Office)

240 210-2318 (Cell)

202 566-2068 (Fax)

Travers.mary-f@epa.gov

From: Nguyen, Khue
Sent: Thursday, March 30, 2017 2:13 PM
To: Travers, Mary-F <travers.mary-f@epa.gov>
Cc: Grable, Melissa <Grable.Melissa@epa.gov>; Perry, Tracy <Perry.Tracy@epa.gov>; Walsh, Linsey <Walsh.Linsey@epa.gov>
Subject: FW: Typeset FR Document Ready for Signature Package (17P-0055; FRL-9960-24)

Hi Mary,

Here is the revised word encoded version of FR 17P-0055. It has the shortened summary, but also additional changes as we discussed this morning, including a new table.

So in terms of next steps: we will complete the typesetting request form, the docket verification/certification form, the action information form, and route this version of the FR for signature.

Let me know if there are additional changes to the FR that is required before we print and route for signature over here. The other forms are not finished, so we will not route for signature until they are ready.

Thanks,

Khue Nguyen

Chemical Review Manager

Risk Management and Implementation Branch 1

Pesticide Re-evaluation Division

Office of Pesticide Programs, EPA

703-347-0248

Nguyen.khue@epa.gov

From: Walsh, Linsey
Sent: Thursday, March 30, 2017 10:26 AM
To: Nguyen, Khue <Nguyen.Khue@epa.gov>
Subject: FW: Typeset FR Document Ready for Signature Package (17P-0055; FRL-9960-24)

Linsey Walsh

Chemical Review Manager

OCSPP/OPP/PRD/RMIB3

U.S. Environmental Protection Agency

(703) 347-8030

From: Travers, Mary-F
Sent: Monday, March 20, 2017 5:11 PM
To: Walsh, Linsey <Walsh.Linsey@epa.gov>; Jakob, Avivah <Jakob.Avivah@epa.gov>; Perry, Tracy <Perry.Tracy@epa.gov>; Schroeder, Carolyn <Schroeder.Carolyn@epa.gov>
Cc: Hofmann, Angela <Hofmann.Angela@epa.gov>; Lanier, Minnie <Lanier.Minnie@epa.gov>; Green, Teresa <Green.Teresa@epa.gov>
Subject: Typeset FR Document Ready for Signature Package (17P-0055; FRL-9960-24)

Hello All!

I have completed my review. Attached are the typeset FR documents for your signature package. Please follow the instructions in this Email to avoid delays and complications. PLEASE make sure when you fill out the typesetting request form, in the large empty block, in the left top corner, you insert, my initials (MT) and 17P -0055.

What am I providing you?

1) **FR Document – The final signature ready copy in Word.**

Important Note:

You must print a SINGLE-SIDED copy of the FR document to use as the original for inclusion in the signature package that will be given to the official who must sign the FR document. *** IF you can find out who will be signing the document, PLEASE, insert their name on the signature page******** The Office of the Federal Register (OFR) requires the original signature to be on a single-sided FR document. If the original signature is on a double-sided document, the OFR will NOT accept it and you will have to get your manager to sign a single-sided version. The other documents can be double sided.

Process for Correcting the FR Document:

I've attached the word version, in the event of needed changes. Email the corrected version directly to me BEFORE you get the document signed. That way paper and electronic version match. **Also, when you print your document for signature, please make sure it's in Times New Roman, 12 pt. and single sided. Make sure the signature page is on a separate page.**

2) **Concurrence Sheet** - Include this sheet in your signature package to document the reviewer's concurrences for your records. You do NOT need to return this to us – it is for YOUR records.

3) **Typesetting Request Form** – Follow the attached guidance document that was sent on June 16, 2015 that provides detailed instructions for staff and managers in OCSPP that must obtain the required publication funding commitment for an FR document. In addition to explaining how the form should be completed, this guidance document describes the typical process used to get the necessary funding commitment.

Remember that you MUST complete the TSRF and get your funding commitment BEFORE the FR document is signed. You MUST submit a completed and funded TSRF to the RCS when you

submit the signed FR Document to RCS for publication processing. (see attached pdfs)

4) **Docket Verification and Certification Form -** Use the electronically fillable and signature enabled pdf form that is available through FDMS. The completed form will be used to satisfy the "proof of docket" requirement because it shows that the docket manager has verified that the docket you cited has indeed been established for your action, and that you have or are in the process of submitting all of the relevant documentation that must be in the docket. You will need to provide completed form to us when you submit the signed FR Document for publication processing (see below).

5) **Action Information Sheet** – Required information from OP for all documents going to the OFR. Please fill out the information and return the form or else your document will not be processed for publication by OP.

AFTER signature, deliver the following to RCS in WJC East Rm 3139:

1) FR Document – The original signed & dated FR Document.

Remember: The original must be SINGLE-SIDED!

2) Typesetting Request Form – The original signed, funded & dated form.

Remember: Include documentation of the funding commitment.

3) Docket Verification and Certification Form – The signed & dated form.

4) Action Information Sheet – send back the paper copy!

If you have questions, let me know.

THANKS,

Mary F. Travers

Regulatory Coordination Staff (7101M)

Office of Chemical Safety and Pollution Prevention

United States Environmental Protection Agency

202 566-1588 (Office)

240 210-2318 (Cell)

202 566-2068 (Fax)

Travers.mary-f@epa.gov

Exhibit 6

Endangered Species Act: Section 7 Consultations and Next Steps
PPDC Meeting, May 3, 2017, Session 4e

- The EPA has continued to work closely with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) (collectively referred to as the Services) to develop shared interim scientific methods for use in pesticide consultations, based on recommendations from the 2013 National Academy of Sciences' report "Assessing Risks to Endangered and Threatened Species from Pesticides".

- Given consultation deadlines and existing resources, the EPA will continue to address stakeholder recommendations in a phased and iterative approach.

- EPA released final Biological Evaluations (BEs) for three pilot chemicals including chlorpyrifos, diazinon, and malathion in January 2017.
    - Revisions to the final BEs based on stakeholder feedback include refined aquatic modeling, error corrections, improved transparency specifically related to the Terrestrial Effects Determination (TED) tool and the Weight of Evidence (WoE) matrices, and additions/deletions to the list of endangered and threatened species.
    - Posted documents include Response to Comments received during the 60-day public comment period for the draft BEs.
    - On April 13, 2017, Dow AgroSciences, LLC; Makhteshim Agan of North America, Inc.; and FMC Corporation sent letters to the political leadership of EPA, FWS, and the NMFS making a number of requests. The letter requested that EPA withdraw the BEs for chlorpyrifos, diazinon, and malathion; that the Services stop work on their Biological Opinions (BiOps) for these pesticides; and that the Services modify various ESA-related settlement agreements to allow more time for the agencies to complete pesticide consultation. CropLife America voiced support for the request in a subsequent April 19, 2017, memorandum to EPA, FWS, and NMFS. EPA is considering the request.

- Draft BEs for carbaryl and methomyl are expected to be released soon for 60-day public comment.

- Based on previous public comments, the EPA is exploring the following additional revisions for future BEs:
    - reducing the size and complexity of the BEs;
    - a move toward more probabilistic approaches;
    - refinements in geospatial data used to define species ranges and potential use sites;
    - use of watershed-level aquatic exposure models;
    - improved methods for estimating exposures in riverine and estuarine/marine habitats;
    - improved characterization and consideration of magnitude of effects; and
    - a consideration in the timing and duration of potential pesticide exposures (e.g., linking exposure with life-history variables).

- EPA is also exploring ways to use species-specific toxicity data earlier in the first step of the BE process to refine, and still maintain a protective screening process.

- The EPA continues to work with the Services on interim methods for Step 3 (i.e., the Services' determination of "jeopardy/adverse modification" or "no jeopardy/no adverse modification") in the Biological Opinion (BiOp).

- The EPA expects to release the Services' draft BiOps for chlorpyrifos, diazinon, and malathion for a 60-day public comment period in late May or early June 2017 with final BiOps by December 2017. The EPA expects to release final BiOps for methomyl and carbaryl by December 2018.

Exhibit 7

INSIDEEPA.COM
an online news service from the publishers of Inside EPA

Pesticide Reviews Advance But EPA Attainment Of Court Schedule Uncertain

October 02, 2017

Trump administration officials are reviewing staff-level draft biological opinions of the first pesticides to undergo a new process for assessing risks to endangered species but it is unclear whether they will complete their reviews and forward them to EPA in time to meet a year-end court deadline for issuing the final versions.

Gina Shultz, deputy assistant director of ecological services at the U.S. Fish and Wildlife Service (FWS), tells *Inside EPA* in a recent interview that the service has completed drafts of the first three biological opinions (BiOps) and is currently seeking Trump administration review before forwarding the documents to EPA.

"We are in the process of trying to brief our new policy leadership team" on the fist three draft BiOps completed under an Obama-era framework for assessing pesticide risks to listed species. "We want to make sure that everybody understands and is comfortable with what this is and the science behind" the new process and the initial reviews.

Federal officials face a court-ordered year-end deadline for reviewing the first three chemicals -- chlorpyrifos, malalthion and diazinon -- to undergo a new inter-agency process for assessing pesticides' risks under the Endangered Species Act (ESA).

But some environmentalists fear the Trump administration will fail to complete the reviews after Dow AgroSciences and other industry officials urged the Trump administration to scrap the process largely crafted during the Obama administration, though they warn that scrapping the process will result in additional work for the agencies, which face later deadlines for a host of additional substances.

Shultz said she did not know whether federal agencies would meet the year-end deadline for evaluating the first three pesticides. She said FWS next step is to send the draft final BiOps to EPA after Trump administration officials in the Interior Department and its Solicitor's Office complete their review.

Shultz also said she is not aware of any Trump administration response to the industry request to scrap the so-called interim approaches, and that FWS continues to improve the process both internally and through meetings with EPA, the U.S. Department of Agriculture and the National Marine Fisheries Service.

"We are continuing to improve and refine the process," she said, noting that federal officials have improved maps of species ranges to better focus on the species that are likely to be affected by pesticide use. "The four agencies do continue to meet periodically and share information and discuss lessons learned" and areas for improvement.

Shultz' assurance that federal officials are seeking to advance reviews of the first pesticides to undergo the new federal review process comes as some environmentalists are raising alarms that the Trump administration will heed Dow's request to scrap the process.

EPA recently sidestepped state pesticide regulators' request for an update on the reviews.

A source with the Center for Biological Diversity (CBD), which won legal deadlines for federal agencies to complete the ESA reviews, says EPA Administrator Scott Pruitt, along with Commerce Secretary Wilbur Ross and Interior Secretary Ryan Zinke, who lead federal wildlife agencies, appear willing to heed pesticide producers' call to scrap the Obama-era process.

But a second environmentalist, who has negotiated with industry in an effort to revise the new process, says that federal officials face a significant workload in completing the novel reviews. Although the source called it concerning that federal agencies have not released draft final BiOps for public comment, the source says work is advancing.

Section 7 Review

ESA Section 7 requires that EPA consult with FWS and/or the National Marine Fisheries Service, collectively known as the services, on pesticides' potential risks to listed species. After an EPA biological evaluation, the services craft a BiOp of the product's potential for jeopardizing listed species and lay out reasonable and prudent alternatives that EPA must implement to protect the species.

But EPA and the services have long failed to conduct the required consultations on pesticides' risks to listed species, resulting in numerous environmentalist lawsuits that have set legal deadlines for the agencies to consult on risks of certain commonly-used pesticides.

In November 2013, EPA and federal wildlife officials rolled out the "interim approaches" process based on National Academy of Sciences advice for complying with the ESA in Federal Insecticide, Fungicide and Rodenticide Act registrations.

Since then, EPA officials have acknowledged that the current process is overly conservative but said they are working to improve it and make it more efficient. Nevertheless, on Jan. 18, days before Trump's inauguration, the Obama EPA forwarded the first biological evaluations to the services, in support of final BiOps due out by December 2017.

During a Sept. 18-19 meeting of the State FIFRA Issues Research and Evaluation Group in Washington, DC, EPA officials sidestepped a request from state pesticide regulators for a status update on reviews of the first three pesticides to undergo the new federal process, saying the agency would provide a response in the future.

Uncertainty over the status of inter-agency consultation on the first three chemicals comes after Dow and two other registrants in an April 13 letters, urged top officials at EPA and federal wildlife agencies to scrap the Obama administration ESA pesticide assessment process, charging the interim approaches are "fundamentally flawed and should be set aside."

The companies urged the Trump administration to halt the first three reviews under the new process, and adopt a new approach, though former Obama-era EPA toxics chief Jim Jones has publicly doubted that the Trump administration will be able to adopt "sustainable" long-term changes to the framework.

The CBD source says that should the Trump administration heed the industry call to scrap the new process and miss the court-ordered deadline for the first three reviews it would only create more work for federal agencies.

"I don't understand what they think they're endgame is. They're just digging themselves into a deeper hole," the source says, noting that federal agencies face deadlines for completing similar future reviews of numerous pesticides, including methomyl, carbarly, and glyphosate.

"If they had just moved forward with consultation, they would have far more clarity" on what steps are needed to protect species from various pesticides and to complete the required for reviews, the source adds.

Should EPA miss the deadline for the first reviews, the source says, the Trump administration would have to show the court that agencies either lacked the resources or expertise to complete the consultations, a high hurdle given progress agencies made under the Obama administration in developing the process and conducting the reviews.

The second environmentalist, who has negotiated with industry in hopes of preserving the Obama-era process, says despite the tight window for seeking public input on the first draft BiOps and issuing the final versions by year-end, federal agencies are continuing the effort.

The source said federal officials face a significant workload, noting that EPA's first draft biological evaluations completed under the new process found the first pesticides are likely to adversely affect an overwhelming majority of listed species and critical habitat, requiring federal wildlife officials to weigh risks to numerous species.

"I think these BiOps are still going to move forward," the second environmentalist source said. "My understanding is it's a lot of work." -- *Dave Reynolds* (dreynolds@iwpnews.com)

205702

Exhibit 8

To: Dravis, Samantha[dravis.samantha@epa.gov]; Bolen, Brittany[bolen.brittany@epa.gov]; Mclean, Kevin[Mclean.Kevin@epa.gov]; Minoli, Kevin[Minoli.Kevin@epa.gov]
Cc: Keigwin, Richard[Keigwin.Richard@epa.gov]; Cleland-Hamnett, Wendy[Cleland-Hamnett.Wendy@epa.gov]
From: Beck, Nancy
Sent: Fri 5/5/2017 11:55:12 AM
Subject: ESA issue bubbling up
ESA Issue Paper_industry letters_5-5-17v2.docx

Samantha and Kevin,

Under the Endangered Species Act (ESA), EPA develops Biological Evaluations (BEs) for pesticides which are then the backbone of Biological Opinions (BiOps) issued by the services (FWA, NMFS). There is a court ordered settlement deadline for the services to complete 3 BiOps by December 2017. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Further details are in the attached. Because we think the Services are likely to release the BiOps in the end of May, we will need to engage quickly.

Perhaps we can chat next week?

Thanks,

Nancy

****

Nancy B. Beck, Ph.D., DABT

Deputy Assistant Administrator

Office of Chemical Safety and Pollution Prevention

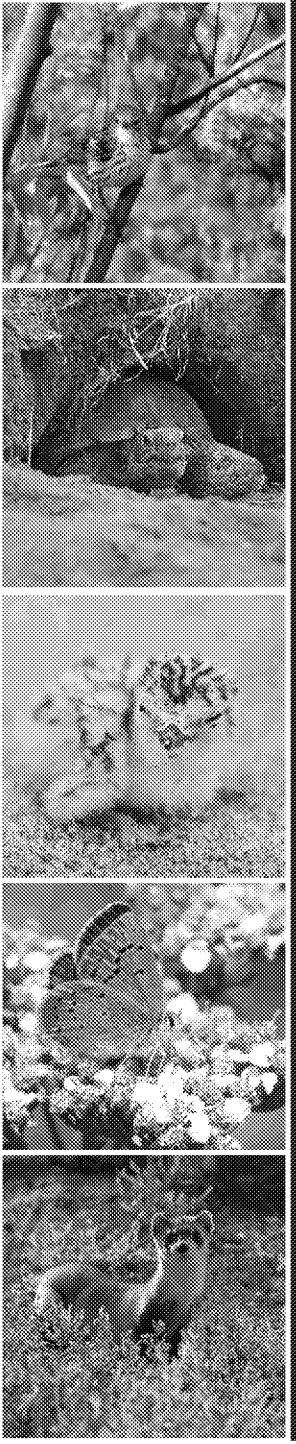
Ex. 6 - Personal Privacy

beck.nancy@epa.gov

Exhibit 9

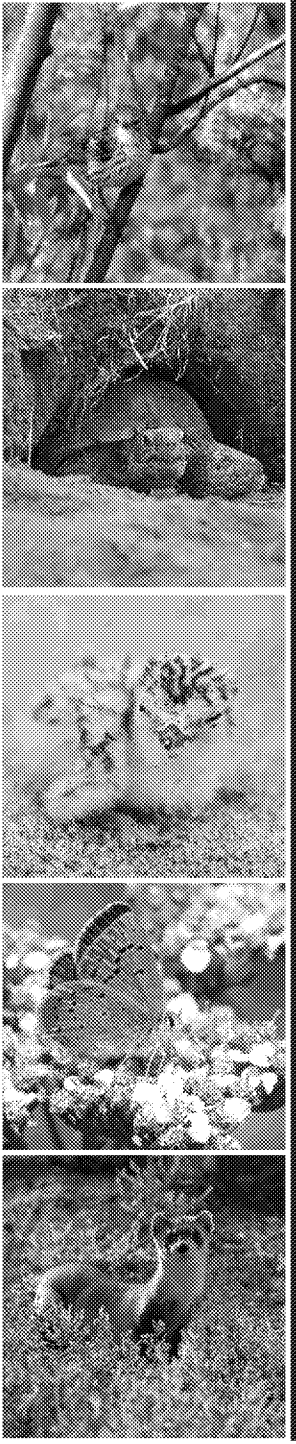
National Pesticide Consultations: An Overview

May 15, 2017



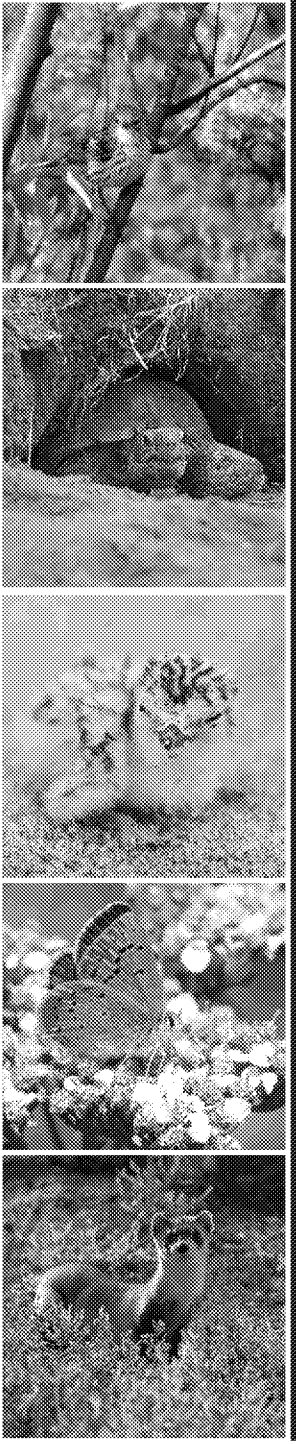
Pesticide Registration Review

- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires registration of pesticide products
- FIFRA requires review of registered pesticides every 15 years
- Section 7 of the ESA requires all federal agencies ensure – in consultation with FWS – actions they authorize are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat



History of FIFRA ESA Section 7 Consultations

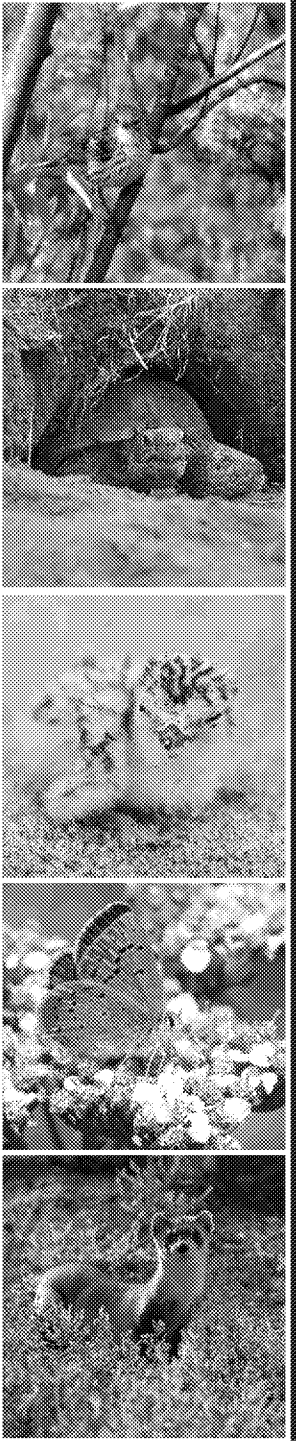
- 1970s: case-by-case consultations began (Endrin, Creosote, Compound 1080, Strychnine)
- 1980s: crop-based "cluster consultations" (Corn, Sorghum, Cotton, Forestry uses, Mosquitos)
- 1990s: consultation on 31 pesticides (Greatest risk to aquatic/terrestrial species)
- 1996 – 2013: agencies unable to agree on risk assessment approach



Pesticides Litigation - EPA

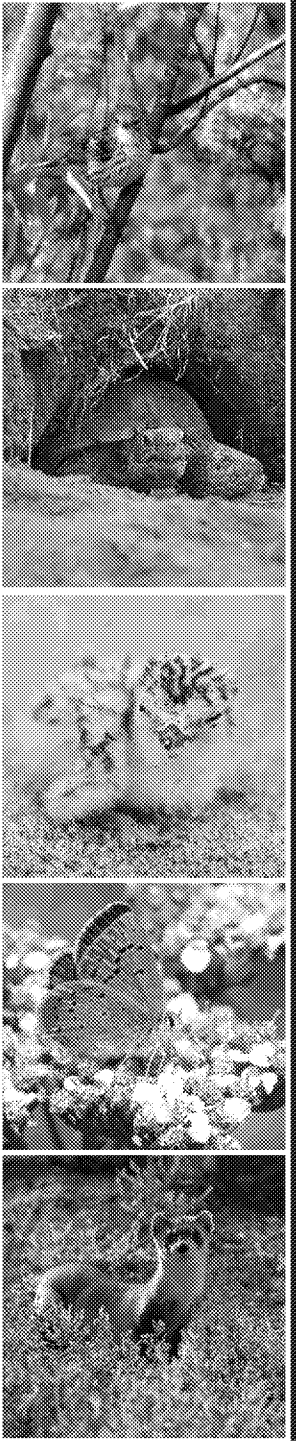
- 2002 – *CBD v. Johnson*: CBD filed suit against EPA for failure to consult on the effects of 66 pesticides on the California red-legged frog
  - Settlement in 2006 – EPA agreed to make effect determinations on 66 pesticides
  - Oct 2007 – Oct 2008 EPA requested initiation of formal consultation on effects of > 30 pesticides on red-legged frog
  - Jan 2009 – FWS informed EPA insufficient information to consult

- 2007 – *CBD v. EPA*: CBD filed suit to compel EPA to initiate consultation on the effects of 75 pesticides on 11 listed species in San Francisco Bay area
  - Settlement in 2010 – EPA complete effect determinations on the 75 pesticides and initiate ESA consultation on those that may affect listed species
  - July 2013 EPA completed effects determinations for 69 of the 75
  - Settlement Amended 2015 – Effect determinations on 4 pesticides (atrazine, simazine, propazine and glyphosate) for all listed species



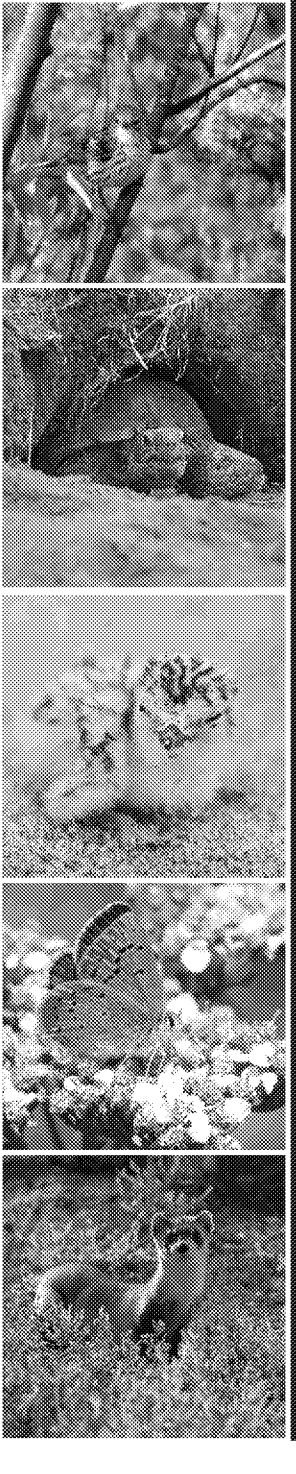
Pesticides Litigation - FWS

- 2011 – *CBD v. FWS*: CBD filed suit against FWS and EPA for failure to consult on the effects of 64 pesticides on red-legged frog
  - Settlement Nov 2013 - FWS and EPA agreed to complete consultation on effects of 7 pesticides on red-legged frog within 3 years
  - Settlement Amended July 2014 – Nationwide consultations on 5 pesticides (3 OPPs, 2 Carbamates)
- 2015 – *CBD v. FWS*: CBD filed a lawsuit against FWS for failure to complete consultation on effects of 2 pesticides on delta smelt and 1 pesticide on Alameda whipsnake
  - Settlement Feb 2016 – Nationwide consultations on 4 pesticides from EPA's 2015 settlement



Settlement Agreement Summary

- December 2017 – chlorpyrifos, diazinon and malithion
- December 2018 – carbaryl and methomyl
- December 2022 – atrazine, simazine, propazine and glyphosate

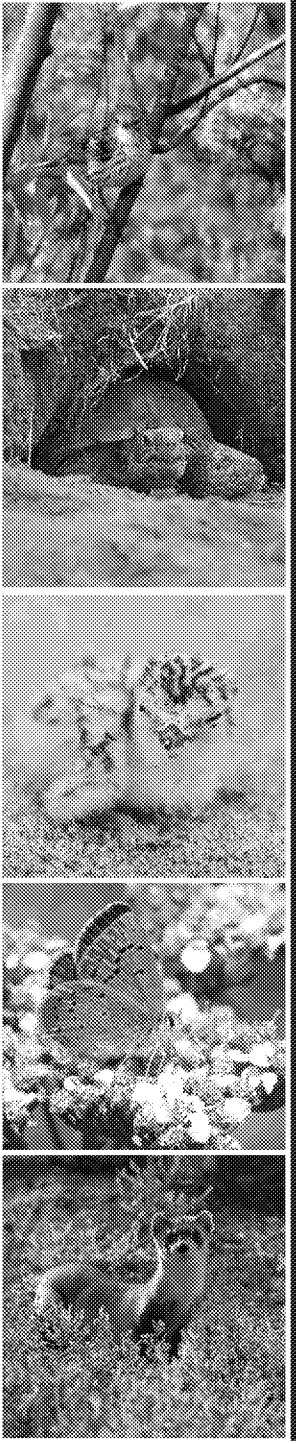


National Academy of Sciences

Assessing the Risks to Endangered and Threatened Species from Pesticides

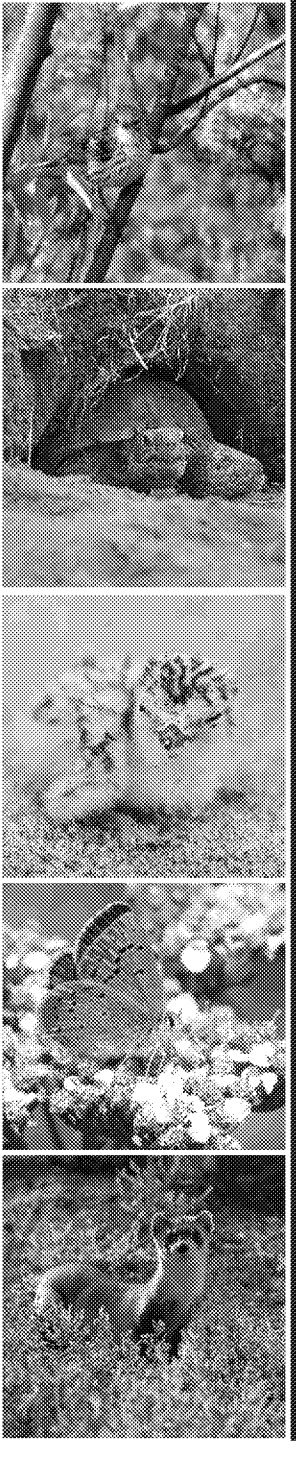
- EPA, FWS, NMFS, and USDA asked National Academy of Sciences to provide recommendations for a path forward

- NAS report recommendations:
  - Common approach
  - Best available data
  - Uncertainty
  - Exposure analysis
  - Effects analysis
  - Risk characterization



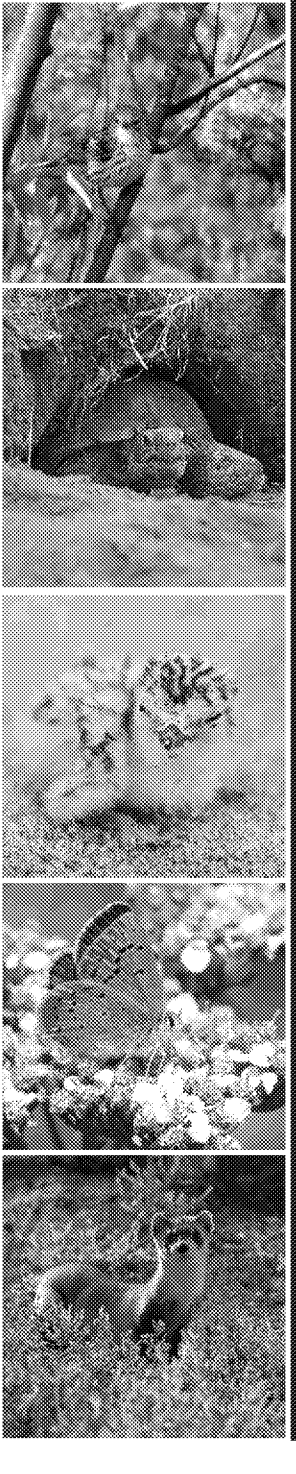
3-Step Process

- NAS suggested using a phased, iterative process that incorporates stakeholder engagement throughout
  - Phase 1: May affect/no affect
  - Phase 2: Likely to adversely affect/not likely to adversely affect (Biological Evaluations by EPA)
  - Phase 3: Jeopardy/no jeopardy (Biological Opinions by FWS and NMFS)
- All agencies agreed to pilot the 9 pesticides through December 2022
- All agencies recognize this process is currently not sustainable, working together to streamline



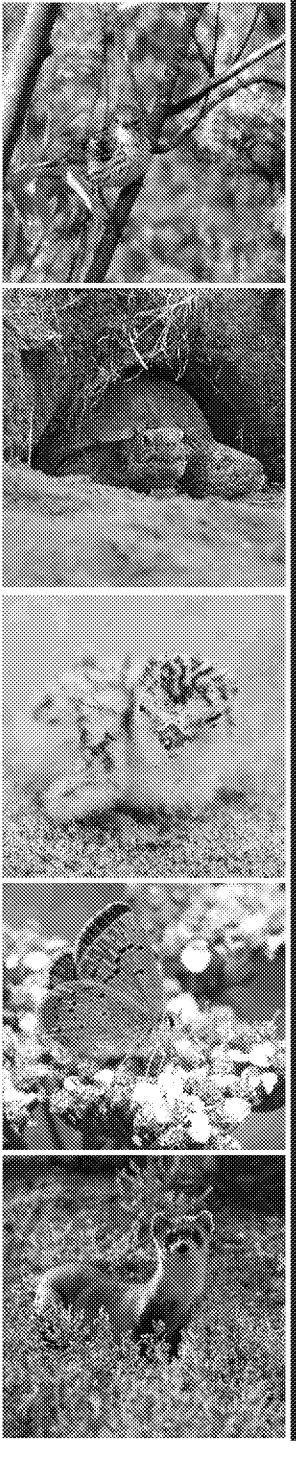
Biological Evaluations Steps 1 & 2

- EPA, in conjunction with FWS, NMFS, and USDA completes BEs:
  - Chlorpyrifos, diazinon, and malathion
    - Final BEs published January 2017
  - Carbaryl and methomyl
    - Final BEs due December 2017
  - Atrazine, simazine, propazine, and glyphosate
    - Final BEs due December 2020



Biological Opinions Step 3

- FWS and NMFS in consultation with EPA and USDA complete BOs:
  - Chlorpyrifos, diazinon, and malathion (OPPs)
    - Final BOs due December 2017
  - Carbaryl and methomyl
    - Final BOs due December 2018
  - Atrazine, simazine, propazine, and glyphosate
    - Final BOs due December 2022

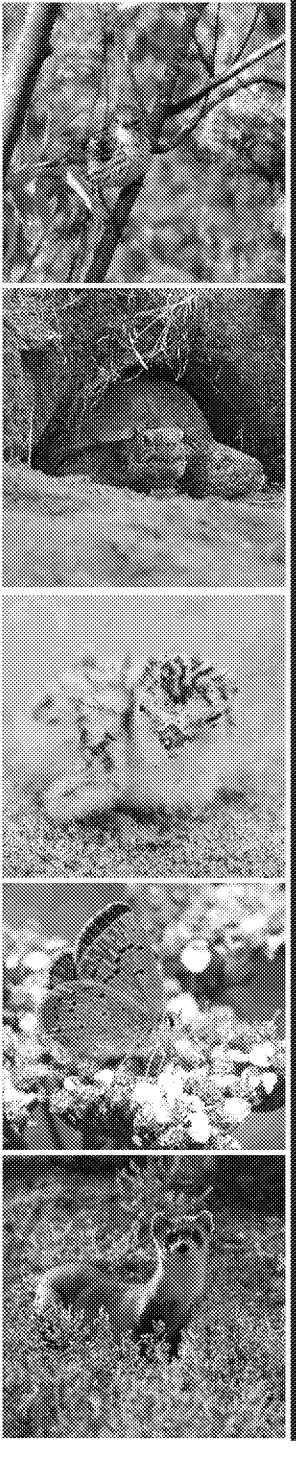


OPP Consultations

- Chlorpyrifos, diazinon, and malathion
  - Widely used insecticides
  - Highly toxic nerve agents
- Preliminary Draft BO May 2017

b5-DP

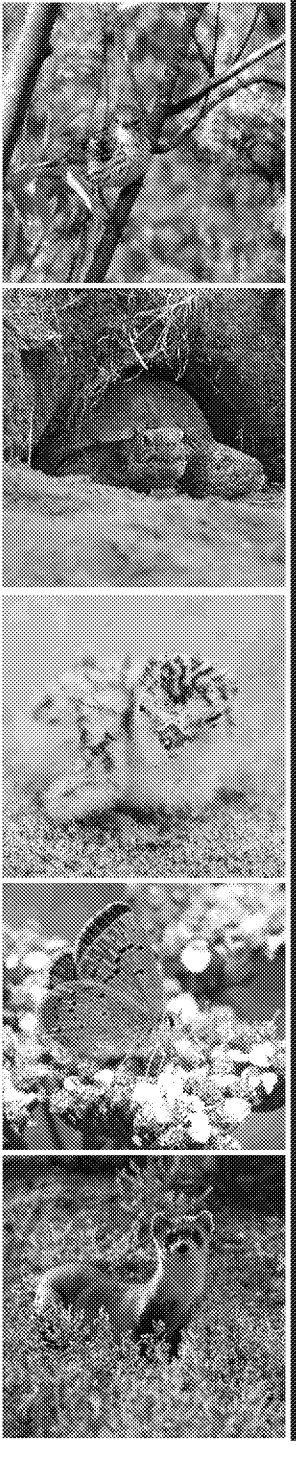
  - RPAs – buffers, equipment, no-spray zone/time.
  - Brief Leadership before release to EPA
- Draft BOs to EPA June 2017
  - 60-day comment period



Interaction with Congress

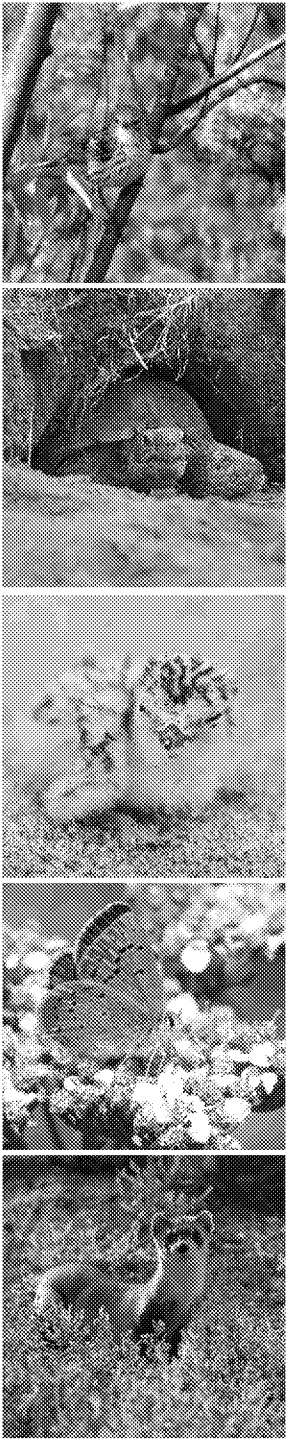
- Provided numerous briefings for Senate Agriculture Committee and Staff

- Reports to Congress on Endangered Species Act Implementation in Pesticide Evaluation Program
  - Update on implementation of NAS recommendations and stakeholder engagement
  - Written by EPA, FWS, NMFS, and USDA
  - Interim Report provided November 2014
  - Final Report pending clearance



Industry Letters

- Dow AgroSciences, Makhteshim Agan of North America, and FMC Corporation
  - Asking EPA to withdraw BEs and FWS/NMFS to return BEs to EPA
- Crop Life America
  - Support for Dow et al. letter
- FWS Recommendations
  - Complete OPP BOs unless EPA withdraws BEs
  - Continue nationwide consultations on the 9 pilot pesticides covered by settlement agreements
  - Continue to streamline consultation process



Next Steps

- Clear Final Report to Congress
- Resolve response to Industry letters
- Brief on preliminary draft OPP BOs
- Transmit draft BOs to EPA for release
- Work with registrants and pesticide users on RPAs and RPMs
- Implement lessons learned for next BEs/BOs

Exhibit 10

From: Aubrey, Craig
To: Gary Frazer; Ashfield, Patrice; Gina Shultz
Subject: National pesticide consult briefing materials
Date: Friday, October 6, 2017 11:15:50 AM
Attachments: National Pesticide Consultation briefing for David Bernhart 10_6_17.pptx
20171006_pesticide consultation update ca.docx

Gary, Patrice updated the ppt we shared with Greg to reflect the change you requested. She also merged a cpl of the slides on malathion and chlorpyrifos b/c they had redundancies.

We also updated the BP we shared with SOL earlier this summer on the pest litigation.

Let me know what else we can provide/change...

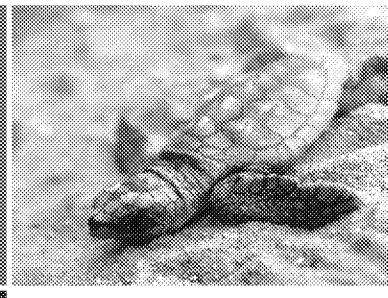
The briefing has been changed to Wednesday. I would like to get your thoughts on how we will proceed. Do u intend to give the briefing or should it be one of us? It will be Gina's 1st day back from vacation, so she will not have been able to prepare. Patrice is on leave, but wants to be able to attend (not currently on the invite - not sure if we're trying to not overwhelm the POLS with bureaucrats).

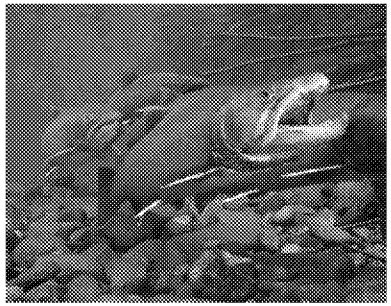
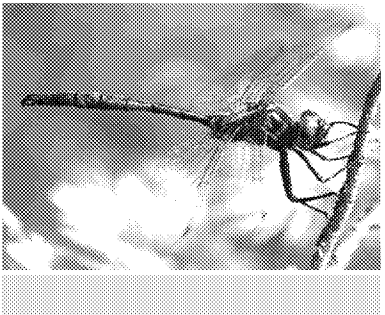
Thanks,

Craig

Craig W. Aubrey
Chief, Division of Environmental Review
Ecological Services Program
U.S. Fish and Wildlife Service Headquarters
Ecological Services, MS: ES
5275 Leesburg Pike
Falls Church, VA 22041-3803
703-358-2171 (general)
703-358-2442 (direct)

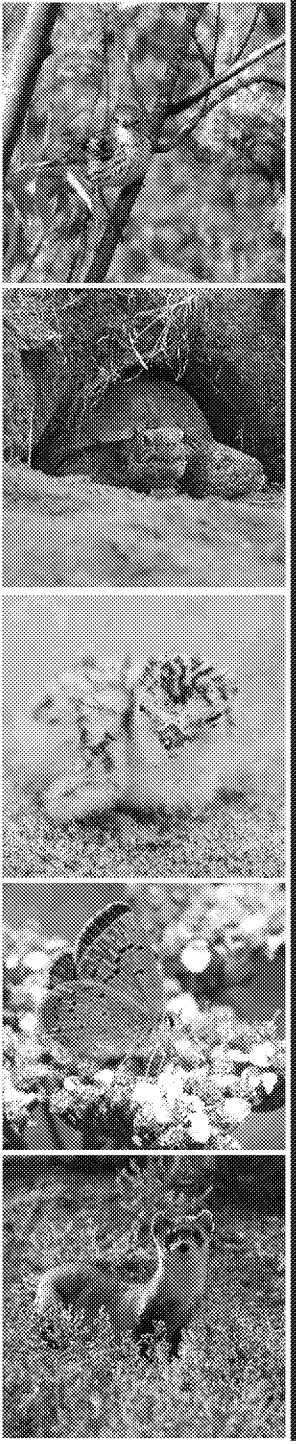




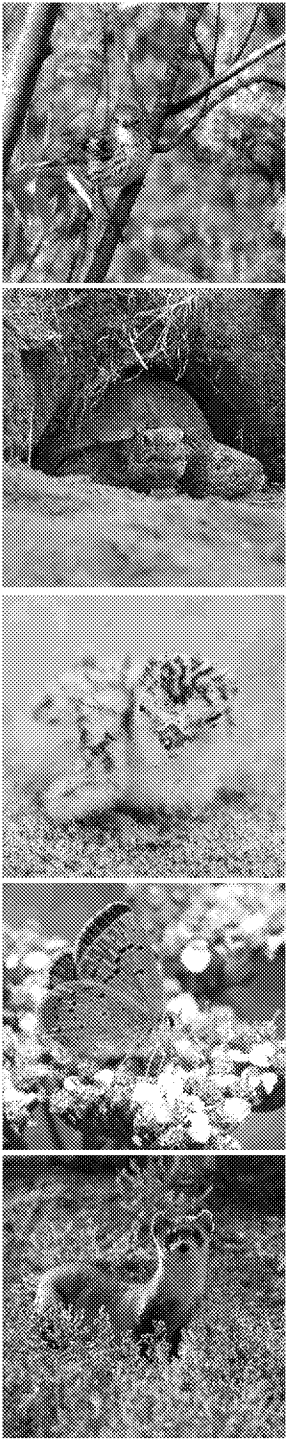
Overview of the National Pesticide Biological Opinions on Chlorpyrifos, Malathion and Diazinon

October, 2017

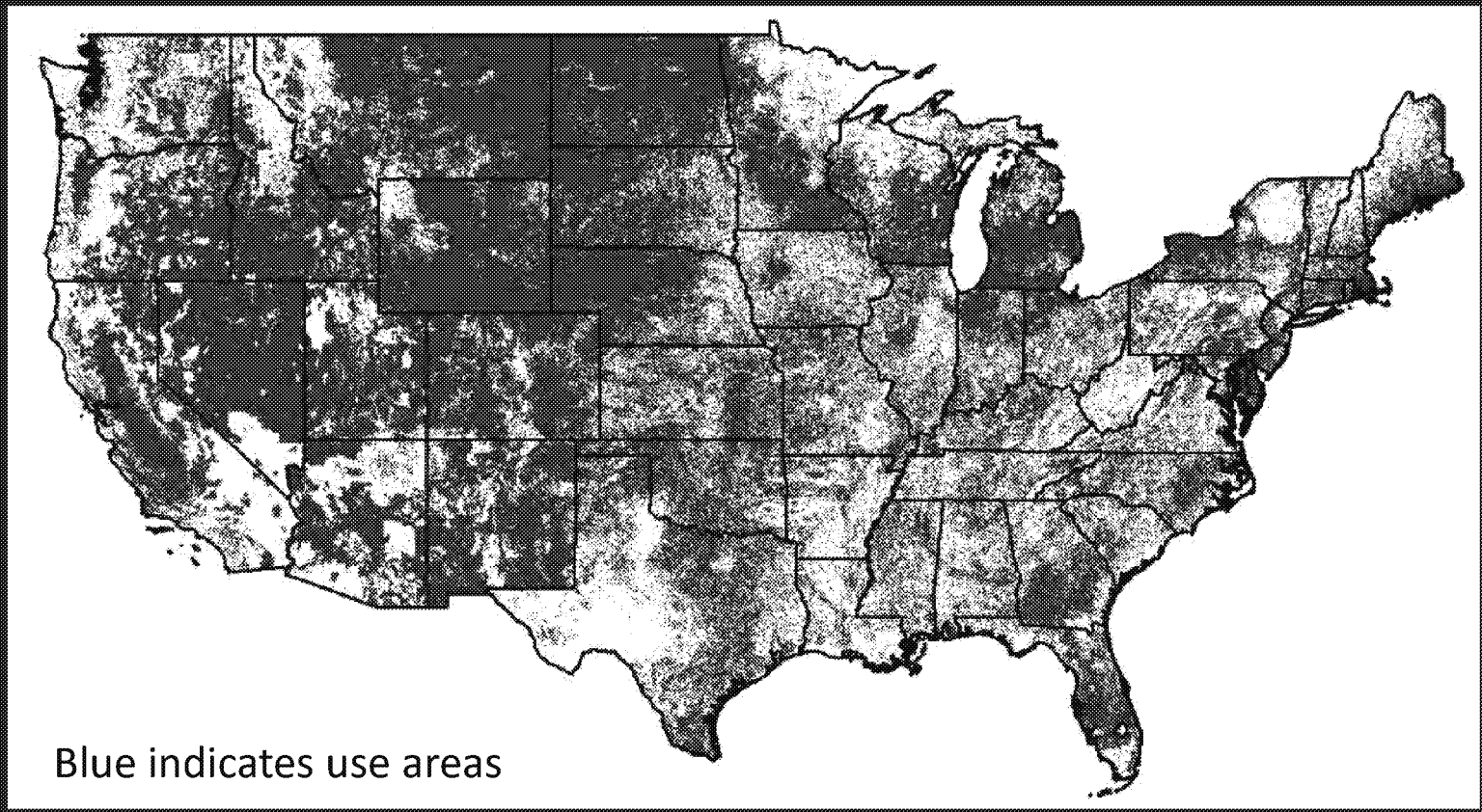


Chlorpyrifos, Diazinon and Malathion

- Broad spectrum insecticides (i.e., kill all insects)
- Organophosphates, work by inhibiting the enzyme acetylcholinesterase (AChE)
- All animals have this enzyme, so effects are not limited to target species
- Highly toxic across taxa
- Few limits on labels for when and where these pesticides can be used so exposure can be widespread (some restrictions for use near residential areas for human health concerns)
- These pesticides have been found far from sites of application, indicating transport via air

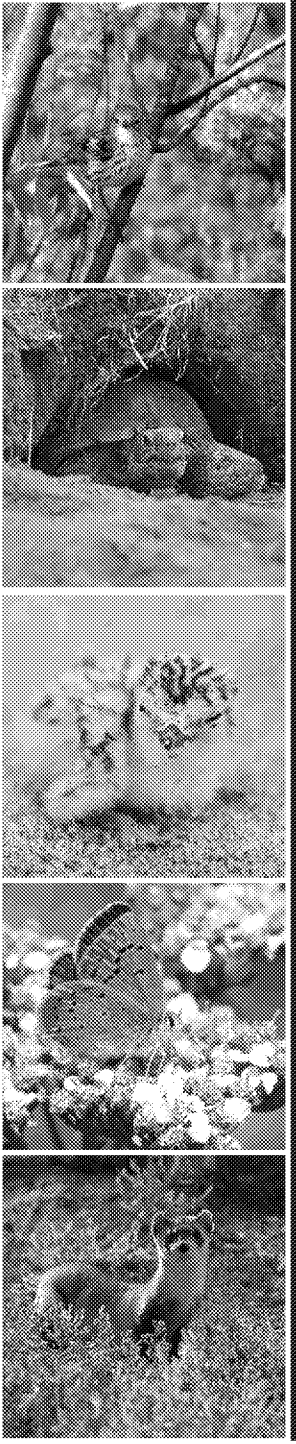


Diazinon Action Area - Labeled Uses



Blue indicates use areas

Action area for diazinon (this figure does not include the parts of the action area associated with Alaska, Hawaii, or the U.S. territories).



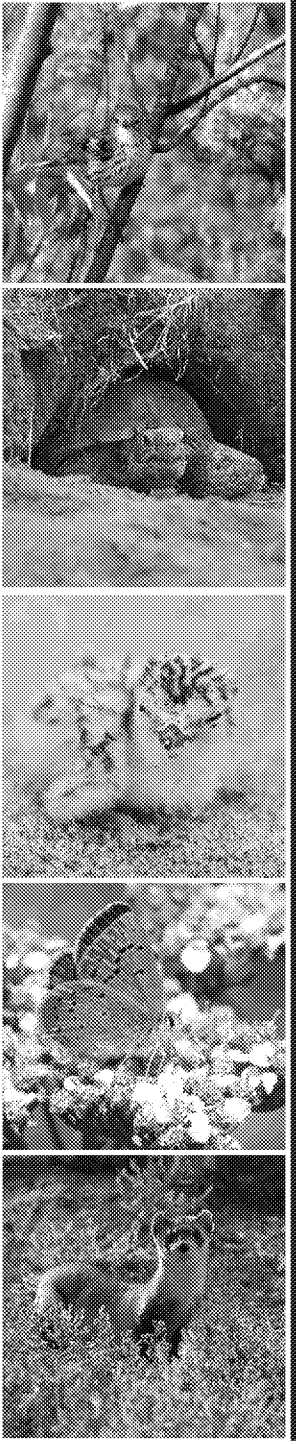
Biological Opinions – Our Approach

The proposed action is the registration of the labels "*the label is the law,*" and currently the labels allow for:

- multiple to numerous repeat applications seasonally or annually per use (e.g., mosquito adulticide up to biweekly throughout year)
- broad-scale use - geographic exclusions are extremely rare

For determining "may affect," we assumed that if a species' range overlapped with a pesticide use site, it would be exposed to that use (i.e., did not consider probability of use/probability of individuals encountering pesticide).

For many vulnerable species, a single exposure could be catastrophic (particularly narrow endemics). Repeated use (such as mosquito adulticide) could eliminate a segment of a population or an entire population in a given area.



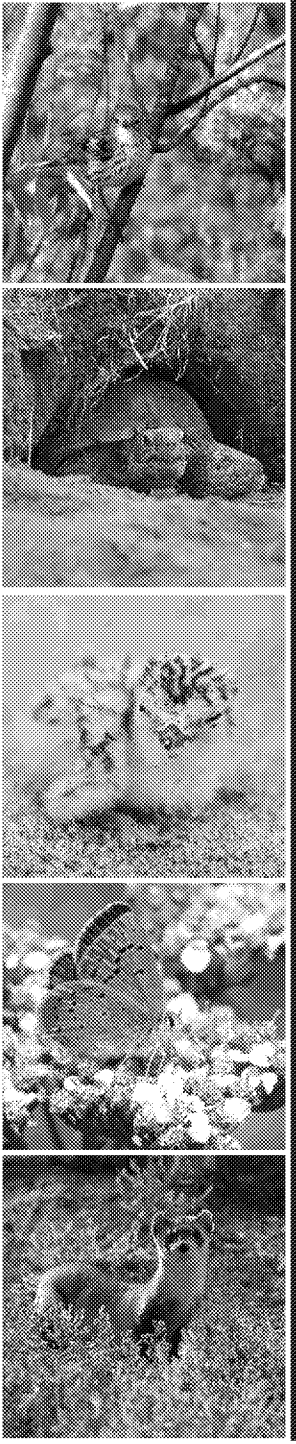
Tools used for the Effects Analysis

We used two tools to estimate the magnitude of effects for species EPA had determined would be adversely affected by the re-registration of these chemicals. They combined the following information to predict the percent of the population affected:

1. toxicity data for a taxa group
2. predicted concentrations in the aquatic and terrestrial environments
3. percent overlap of pesticide use sites with the species range

MagTool - created by EPA. Used for all terrestrial species and a subset aquatic species.

R Plots - created by NMFS. Used for most aquatic species.



Island and Alaskan Species

Pesticide use site data for Alaska and the U.S. islands lack the spatial refinement for the overlap analysis we used for the lower 48, so the approach to the analysis was qualitative.

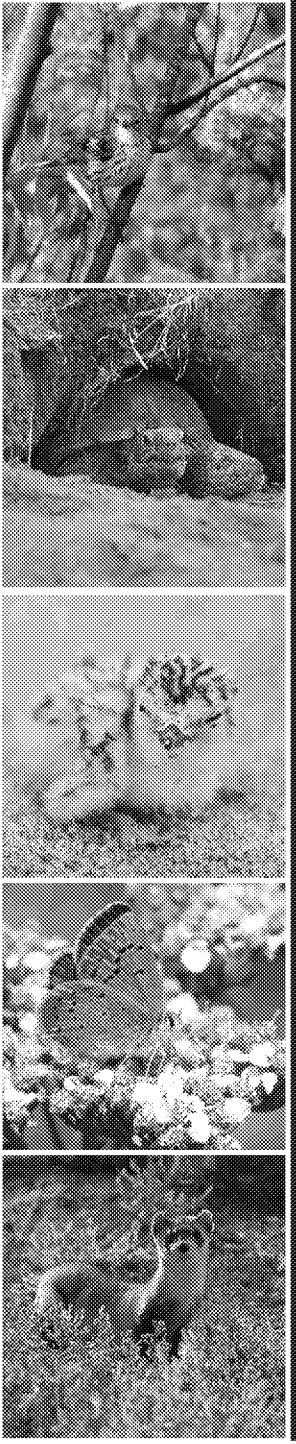
- Alaska = 5 species (1 plant, 3 birds, 1 mammal). All NLAA due to reduced overlap of use (less agriculture and adulticide) with species' ranges.
- Pacific Islands (includes Hawaii, Guam, CNMI) = 522 species

  Mammals = 4; Birds = 32; Invertebrates = 45; Plants = 440

  Assessments included label use, incorporating concerns such as many endemic species and few individuals.
- Puerto Rico (includes the Virgin Islands) = 72 species

  Birds = 7 Invertebrates = 1 Herpifauna = 11 Plants = 53

  As with the Pacific Islands, assessments based on allowable label uses and highly endemic, restricted species.



Critical Habitat Assessments

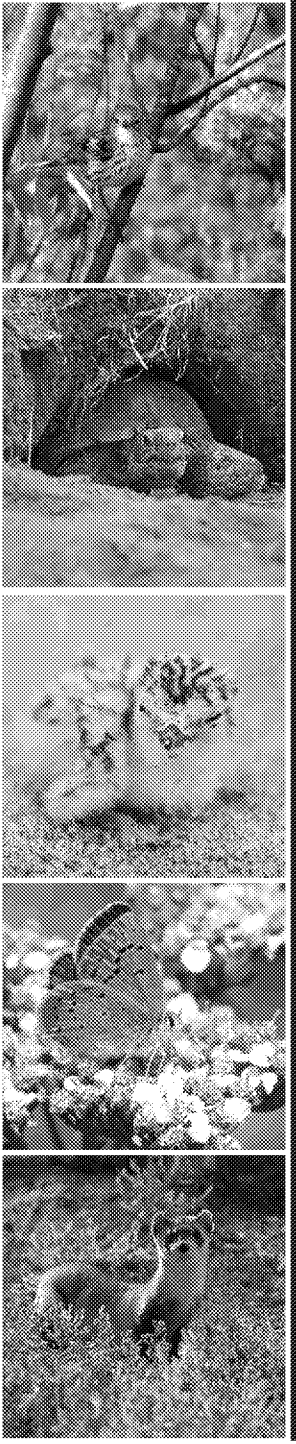
Steps for our assessment of the action to CH:

1) We reviewed the Primary Constituent Elements (PCE) or Physical and Biological Features (PBF) for every proposed and designated CH

2) We determined whether the PCE or PBF could be directly or indirectly effected due to the use of pesticides

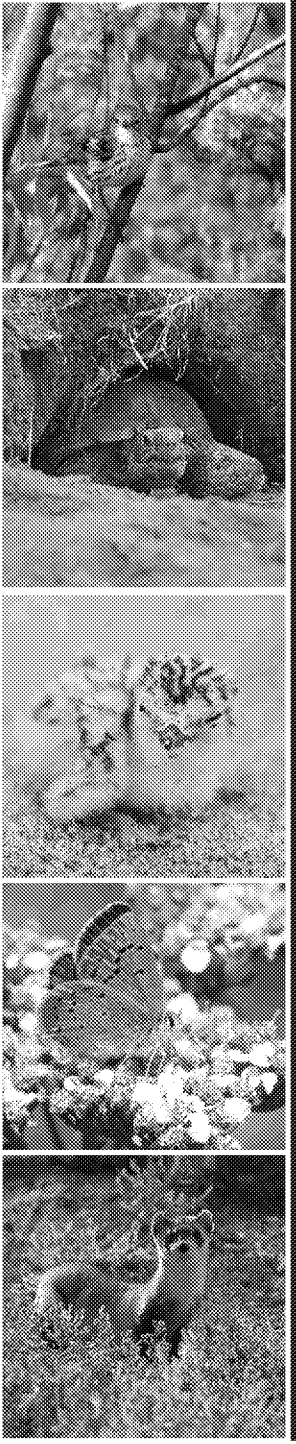
3) If there was no direct or indirect link between the use of the pesticide and the PCE/PBF, we determined likely no destruction or adverse modification of critical habitat

4) If the PCE/PBF was directly or indirectly affected, then we looked at the percent overlap of the chemical use within the critical habitat. From there, we determined if destruction or adverse modification was likely based upon status of the habitat, percent overlap of the pesticide use, and causal link of the impact to the PCE/PBF.



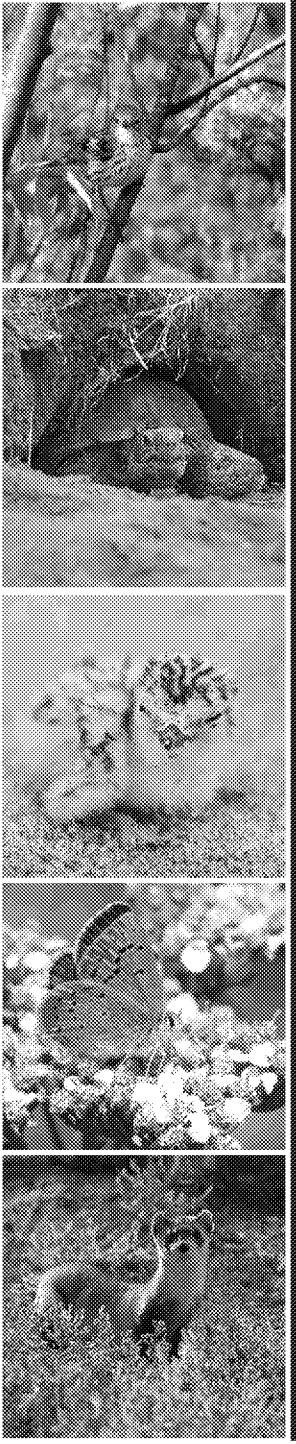
Chemical Overview – Chlorpyrifos and Malathion

- Various agricultural and non-agricultural uses including: crops, orchards and vineyards, pasture, managed forests, right of ways, and developed areas (e.g. public parks, golf courses, home use).
- Also used for the following with no geographic and few temporal restrictions
  - mosquito adulticide control
  - wide area use (ant bait and foliar spray)
- Other uses: cattle ear tags, seed treatment, granular formation, bait
- Can remain in the environment for weeks to months after application, resulting in potential effects to species after application



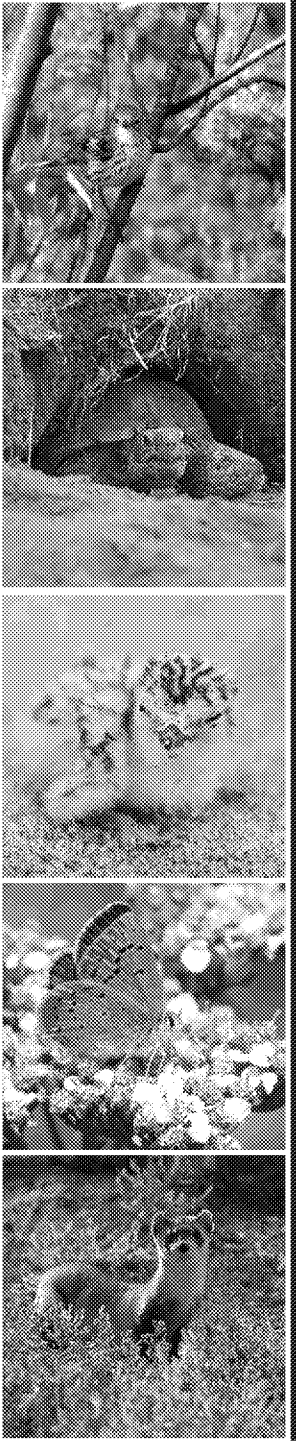
Chlorpyrifos and Malathion - Effects

- High overlap between uses and species' ranges
- High toxicity for all animal taxa. In general, regardless of use site, exposure from chlorpyrifos and malathion to listed animal species could result in:
  - direct mortality (vertebrates and invertebrates)
  - impacts to growth, reproduction and behavior (vertebrates)
  - indirect effects to food sources
- Similarly, listed plants would experience indirect effects from loss of pollinators.
- For mosquito adulticide and wide area use applications, potential for direct and/or indirect effects to all species over 100% of range based on lack of label restrictions.



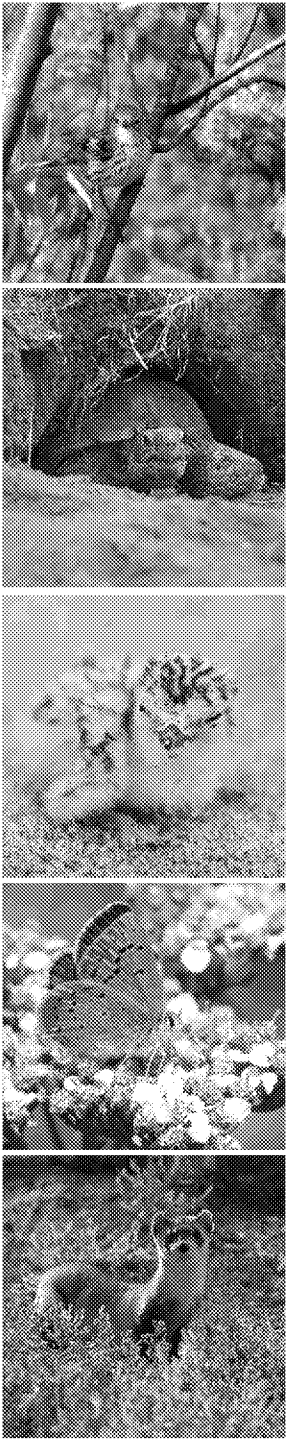
Chemical Overview – Diazinon

- Due to risk to human health and the environment, use of diazinon was severely restricted in 2004
- Remaining uses are limited to select crops, orchards, vineyards and nurseries
- Can also be used in cattle ear tags
- Can remain in the environment for weeks to months after application, resulting in potential effects to species post application



Diazinon - Effects

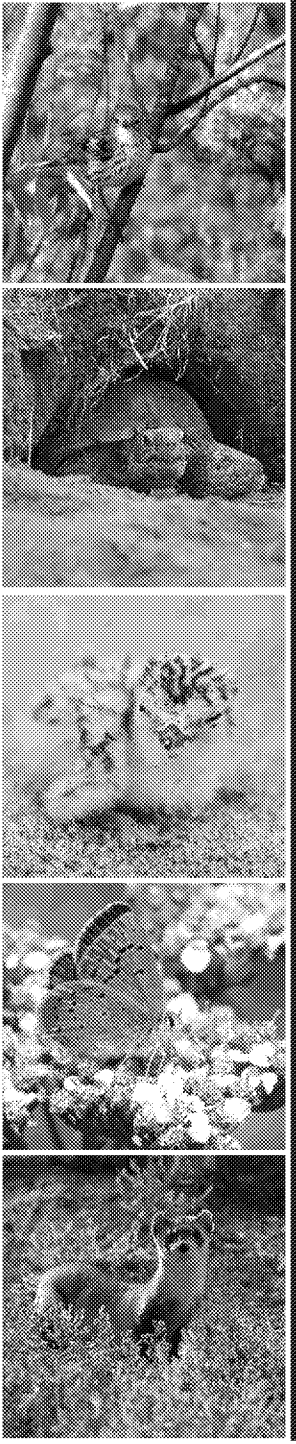
- Compared to the other two chemicals, less overlap between diazinon use and species' ranges
- High toxicity for all taxa. In general, regardless of use site, exposure from diazinon to listed animal species often resulted in mortality and indirect effects to food sources.
- Similarly, listed plants would experience indirect effects from loss of pollinators.
- Due to high toxicity, effects predicted from spray drift onto adjacent use sites for many terrestrial species



Draft Biological Opinion Conclusions

	Species			Critical Habitat		
	Jeopardy	No Jeopardy	NLAA	Ad Mod	No Ad Mod	NLAA
Chlorpyrifos	1399 (88%)	130 (8%)	56 (4%)	169 (23%)	562 (76%)	11 (1%)
Malathion	1284 (81%)	192 (12%)	108 (7%)	163 (22%)	546 (74%)	31 (4%)
Diazinon	175 (12%)	843 (57%)	473 (32%)	20 (3%)	267 (41%)	372 (56%)

Notes:
Does not include no effect call determinations or determinations for experimental populations.



Effects for Plants

Indirect effects to plants most significant – loss of pollinators

- Vast majority of listed plants are pollinated by insects
- Substantial overlap for chlorpyrifos and malathion uses, especially 100% overlap for adulticide and wide area use
- Many species have low resiliency, redundancy, and representation in addition to declining population trends
- These factors led to numerous jeopardy determinations for insect-pollinated plants for chlorpyrifos and malathion (less for diazinon)

Contra Costa Goldfields

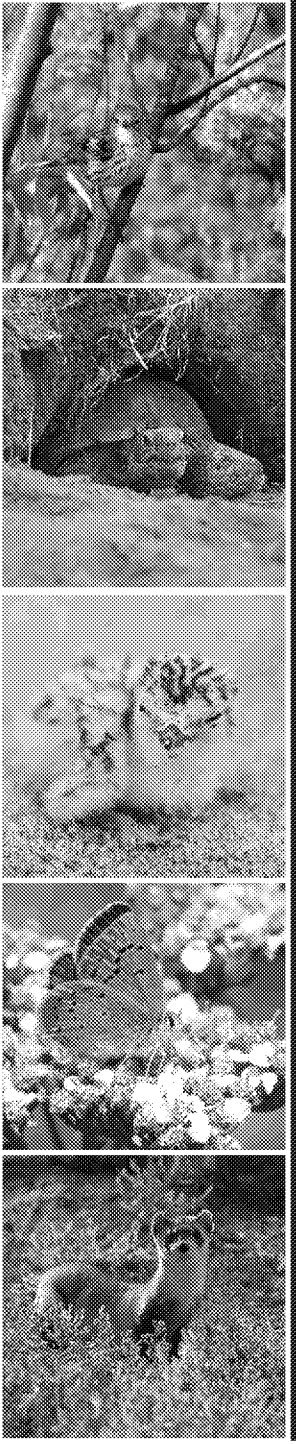


Photo credit: Lori Oberhofer, NPS

Example: Birds

Cape Sable seaside sparrow - chlorpyrifos

Habitat specific (marl prairies) so able to eliminate most exposure on pesticide use sites such as orchards and vineyards and developed areas. Diet mainly aquatic and terrestrial invertebrates.

May be susceptible to exposure from contaminated invertebrates and direct dermal exposure:

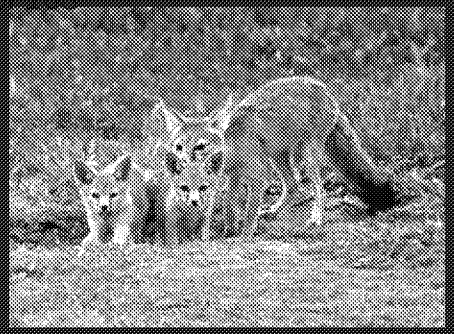
- 6% mortality each year (1% from overlap with pasture, 5% from spray drift from all adjacent use sites)
- Decline in food resources (6%)
- From adulticide, there will be 20% mortality and 100% decline in food resources
- From wide area use, there will be 100% mortality and 100% decline in food resources

Draft Jeopardy

Example: Mammals

<u>San Joaquin kit fox-</u> Diazinon

Photo credit: USFWS

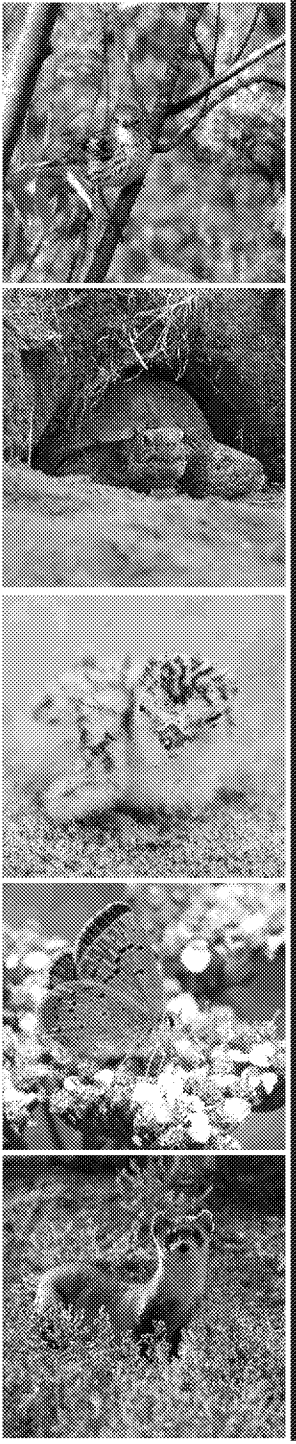


Occurs on fragmented grassland habitat surrounded by intensive agriculture. Diet consists of small mammals such as mice, kangaroo rats, squirrels and rabbits, as well as ground-nesting birds, insects, broadleaf plants, and grasses.

Susceptible to diazinon exposure from consumption of contaminated dietary items and direct dermal exposure.

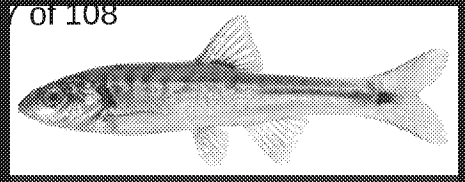
- 10-13% mortality each year from consumption of contaminated arthropods, birds, grasses, leaves, and mammals
- Decline in food resources [mammals (2%), birds (16%), terrestrial invertebrates (16%)]
- Effects to growth, reproduction , behavior (16%)

<u>Draft Jeopardy</u>



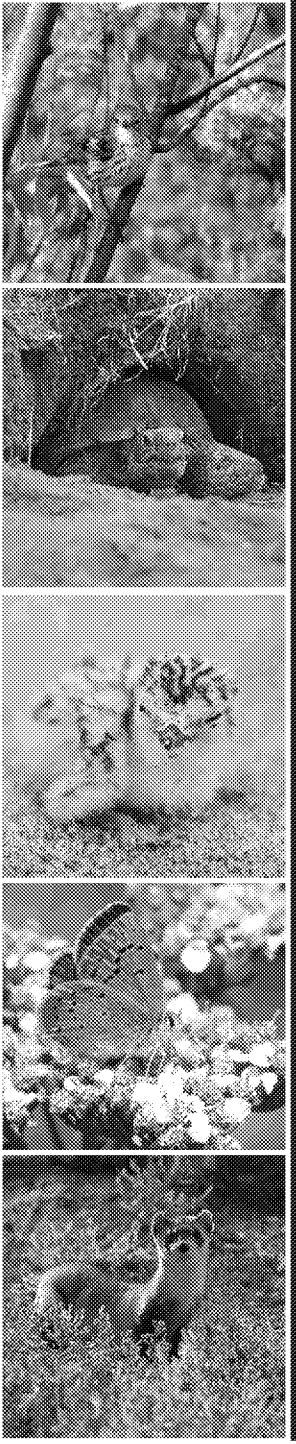
Example: Fish

Moapa dace



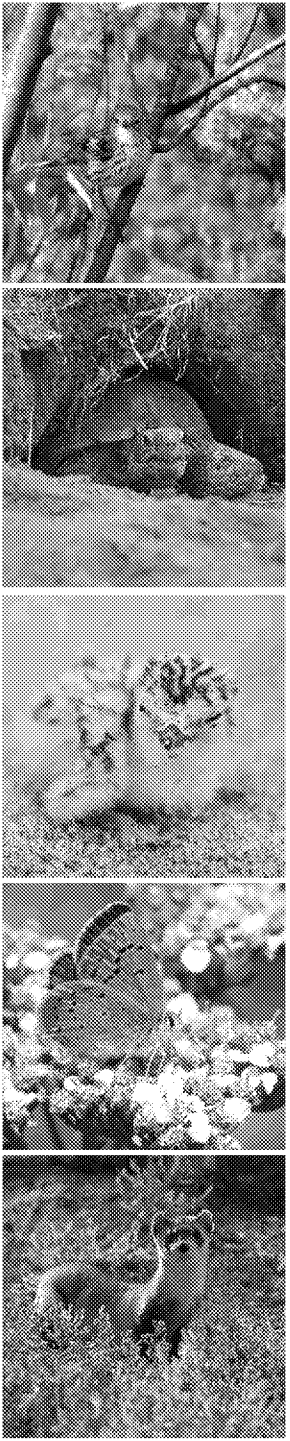
If exposures to chlorpyrifos and malathion were to occur, there would be adverse effects to dace and their aquatic invertebrate prey. However, most of the species' range is on a Refuge and the Warm Springs Natural Area, both of which are managed in part for the dace. Therefore, we were able to eliminate most exposure from pesticide use sites in our analysis.

- Draft No Jeopardy for chlorpyrifos and malathion
  - Some adverse effects from drift and from exposure in the range outside of the protected areas
  - Buffers and other conservation measures related to pesticides are specified in the stewardship plan
  - Refuge manages for the dace
- Draft not likely to adversely affect for diazinon – the only overlap is cattle ear tag use (we considered the effect from ear tags discountable for the dace)



Path Forward

- We are coordinating with EPA to ensure they accept our analytical process and conclusions as scientifically sound.
- Transmit the draft biological opinions to EPA
- Work with EPA, NMFS, USDA, registrants, and grower groups to:
  1. refine our effects analyses between the draft and final biological opinions; and
  2. identify measures to avoid jeopardy and destruction or adverse modification determinations.



Questions?

Exhibit 11

FULL COMMUNICATIONS STRATEGY

FOR HIGH-PROFILE OR CONTROVERSIAL ANNOUNCEMENTS

SECTION I: GENERAL INFORMATION

1. **Plan title** National Pesticide Draft Biological Opinions on Chlorpyrifos, Malathion and Diazanon

2. **DTS number** 066537

3. **What is the action triggering this communications plan?** *(Please explain in no more than three sentences. Additional background information may be included in the appendix)*

The Service will be transmitting to the Environmental Protection Agency (EPA) our draft biological opinions on the effects of three pesticides (chlorpyrifos, diazinon and malathion) on all Endangered Species Act (ESA) candidate, proposed and listed species, and all proposed and designated critical habitats in the U.S. and its territories. By transmitting these biological opinions to the EPA, we are meeting our obligations under section 7 of the ESA for the re-registration of the three pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act.

4. **What is the proposed date for this action? Why has it been selected? Is it flexible?**

The Service is under a court-ordered settlement agreement to finalize its consultations on these three pesticides by December 31, 2017. This deadline was jointly agreed upon by the Center for Biological Diversity (CBD), EPA and the Service. We are seeking to transmit the draft biological opinions to the EPA by mid- to late October 2017. The EPA will release the draft biological opinions for a 60-day comment period before they are finalized.

5. **Which office is leading this communications effort and which other programs, regions or groups are involved?**

External Affairs in Headquarters office will lead this communications effort, in close collaboration with Ecological Services. We will coordinate with EPA on timing and messaging, and share outreach with all FWS regions, given that species and critical habitats in every region are involved.

NOAA-NMFS is submitting separate BiOps to EPA on the same pesticides. As such, we will coordinate with their EA office on this action.

SECTION II: GOALS

6. **What is our ultimate goal here beyond simply informing people of this action?** *(How do we want audiences to regard the Service as a result of this action?)*

We want target audiences to regard the Service as not only having fully met its ESA consultation requirements through this action, but that our draft findings are entirely based on science. We want target audiences to fully understand this action and what jeopardy and adverse modification findings mean and that adverse effects to every listed species and critical habitat can be minimized.

Finally, we want target audiences to understand that we are committed to working with industry and stakeholders to protect America's imperiled wildlife while helping industry and landowners avoid jeopardizing listed species and destroying or adverse modifying critical habitats. Importantly, every jeopardy and adverse modification finding can be avoided through Reasonable and Prudent Alternatives between now and the final biological opinions.

7. **What story do we want to tell?** *(What should audiences understand, appreciate or connect with emotionally?)*

The Service remains committed to working with diverse partners to conserve America's imperiled wildlife based on science. [redacted]

SECTION III: ASSESSING STAKEHOLDER INTEREST AND POSITION

8. **External audiences** *(Please name up to five target audiences to inform the messages, tactics and stakeholder contact lists below. Be as specific as possible. Only list media if there are issue-specific outlets that merit targeting. General "media" and "the public" should not be used)*

Partner agencies, including EPA, NMFS, USDA

Agricultural groups and pesticide users

Pesticide registrants

Members of Congress

Conservation groups and petitioners, including CBD and Xerces Society

9. **Internal audiences** *(Please note any audiences within the Fish and Wildlife Service or Department of the Interior)*

Regional External Affairs offices, HQ Ecological Services

10. **Which groups or individuals may publicly oppose this action? What are their primary concerns?** *(This may include any or all of those described in Target Audiences and/or additional ones. Write "none" if no opposition is expected)*

Pesticide manufacturers, registrants, agriculture groups, farmers/ranchers – may oppose the findings as overly conservative and burdensome restrictions that will prevent them from using pesticides and hurt their bottom lines. May also take issue with science and methodology of the biological opinions.

USDA – may oppose our biological opinions on grounds that they do not represent best available or robust science. (USDA has already make these arguments internally and has avoided engaging the Service throughout much of consultation process.)

EPA – may argue that our biological opinions are not based upon the best available science.

Members of congress, especially in agriculture districts – they will likely hear from industry and agricultural constituencies that restrictions are unfair, overly burdensome and harmful to agricultural production.

11. What stakeholder groups or third-party validators might be leveraged for a statement, quote or other supportive action?

The Service should contact Defender of Wildlife, to see if they have recommendations regarding which pesticide registrants and other stakeholders would be most appropriate to give a statement.

SECTION IV: KEY MESSAGES

12. What are our topline, big picture messages? *(These should be top concepts that readers should take away, including an understanding of why this action matters and why they should care, not a list of facts, which should be placed in the appendix. List no more than three!)*

The Service has completed three draft biological opinions, analyzing the effects, of three pesticides (chlorpyrifos, diazinon and malathion) on all ESA-listed, and proposed, and candidate species (1,653 species) and designated and proposed critical habitats. (These are the first such national consultations on pesticides for all ESA-listed species and critical habitats of their kind.)

Importantly, jeopardy and destruction or adverse modification can be avoided through reasonable modifications to how and where the three pesticides are used. We will work with registrants, industry, pesticide users, and others in the coming months to develop measures that allow for the responsible use of these chemicals in a manner that avoids jeopardy and destruction or adverse modification of species and critical habitats.

See appendix for definitions of all terms and concepts.

13. What secondary messages are there? *(Again, these are messages, not facts. Divide these by audience if appropriate)*

The findings are based on usage of each pesticide as defined by its label. For pesticides registered for use in the U.S. with EPA, the label is the law.

With the transmittal of the draft biological opinions to the EPA, we anticipate that EPA will request public comment on the draft biological opinions for 60 days. During this time, we will work with pesticide registrants, agricultural groups, Federal agencies and conservation groups to refine our effects analyses and identify measures to minimize impacts and avoid jeopardy and destruction or adverse modification determinations.

Examples of measures for avoiding jeopardy and minimizing impacts include restricting pesticide usage in localized areas; clarifying and revising label-language to eliminate areas where pesticides are not anticipated to be used (such as areas of high elevation and deserts); establishing or increasing buffers to reduce spray drift into areas where listed species may occur; improving pesticide application equipment.

See appendix for additional messaging, background and table of all jeopardy and adverse modification findings each pesticide.

SECTION V: IMPLEMENTATION

14. What is the overarching plan for reaching specified audiences with our key messages?
(Explain the strategic approach and list key tactics)

The outreach strategies for this action are still under consideration. We will closely coordinate with EPA and NOAA-NMFS on both messaging and strategies, which will likely include one of the following:

1. **Joint proactive**: Issue a joint news release with EPA (and possibly NMFS) when EPA posts the biological opinions and opens the comment period.
2. **Service-only:** Issue a solo Service news release. If EPA decides to issue a news release as well, coordinate on timing and messaging.
3. **Hybrid:** Provide a notification on our website but do not put out a news release. Prepare and use if-asked only talking points for incoming inquiries.
4. **Reactive only:** No web posting, prepare and use if-asked only talking points.

Media and stakeholder webinar? Could go a long way to clarifying for all involved exactly what the draft biops, jeopardy findings and discussion over RPAs/RMAs are and are not, helping ensure informed public discourse.

Commented [AC1]: Gina, I left this one for u.

15. **How will internal audiences be informed and engaged?** *(Be specific! External communications plans will not be approved unless internal communications are adequately addressed)*

TBD

16. **Which communications tools are needed to support these strategies and tactics?** *(Be as specific as possible about the products identified and who will produce them)*

Tool	Responsible	Due Date
TBD		

17. **Implementation timeline** *(If not known, put TBD or the number of days/hours before/after the announcement)*

Date and Time	Tactic	Responsible
All times are in the time zone		
Afternoon before transmittal	Notify members of congress and other VIP stakeholders, including EPA, NMFS and USDA	EA-Haussman, EA-Partners,
Mid to late October 2017?	Transmit biological opinions consultation to EPA.	HQ ES
Mid-November?	ANY OUTREACH SHOULD TIE TO EPA POSTING OF DOCKET **NOT** FWS TRANSMITAL OF BIOPS	HQ ES/HQ EA

Day of transmittal	News release or bulletin to media and stakeholders?	HQ EA-Hires
Day of Transmittal	Congressional notification to key committee staff	HQ-CLA Hausman
Days following transmittal	Offer Congressional briefing for key committee staff (in conjunction with EPA, USDA, and NMFS)	HQ-CLA Hausman

Commented [AC2]: Is this actually the date EPA posts to docket?

18. **VIP Call List** *(Who needs to be called in person by a senior staff member and who will that senior staff member be? Note: not all plans will require such in-person calls)*

EPA - Marietta Echeverria

USDA – Sheryl Kunickis

NOAA-NMFS - Cathy Tortorici

19. **Stakeholder contacts** *(For each, paste in a table that provides organization name, contact person, contact information as appropriate, and the name of the person responsible for making contact)*

Internal

External Pro

External Neutral

Organization:	**Name:**	**Email:**	**Contacted by:**
American Bird Conservancy	Steve Holmer Cynthia Palmer	sholmer@abcbirds.org cpalmer@abcbirds.org	DPIA
Association of Fish & Wildlife Agencies	Jen Mock-Schaeffer	jenmock@fishwildlife.org	DPIA
American Fisheries	Tom Bigford	tbigford@fisheries.org	DPIA

Society			
American Rivers	Chris Williams	cwilliams@americanrivers.org	DPIA
Bat Cons. Int'l	Mike Daulton	mdaulton@batcon.org	DPIA
Center for Biological Diversity	Brett Hartl	bhartl@biologicaldiversity.org	DPIA
Defenders of Wildlife	Bob Dreher Ya-Wei Li	rdreher@defenders.org yli@defenders.org	DPIA
Endangered Species Coalition	Leda Huta	lhuta@stopextinction.org	DPIA
Friends of the Earth	Erich Pica	epica@foe.org	DPIA
National Wildlife Refuge Association/CARE	David Houghton Desiree Sorenson-Groves	dhoughton@refugeassociation.org dgroves@refugeassociation.org	DPIA
National Wildlife Federation	Naomi Edelson Jim Lyon	edelson@nwf.org lyon@nwf.org	DPIA
Natural Resources Defense Council	Andrew Wetzler	awetzler@nrdc.org	DPIA
The Wildlife Society	Keith Norris	Keith.norris@wildlife.org	DPIA
WildEarth Guardians	John Horning	jhorning@wildearthguardians.org	DPIA
Xerces Society	Matthew Shepherd	Matthew.shepherd@xerces.org	DPIA

External Anti

20. Congressional contacts

CLA will contact authorizing committee staff. Division of budget will contact appropriations committee staff

Senate Appropriations Interior S/C – Majority	Chris_Tomassi@appro.senate.gov	(202) 224-7233
Senate Appropriations Interior S/C – Minority	ryan_hunt@appro.senate.gov	(202) 228-0774
Senate EPW – Majority	Matt_Leggett@epw.senate.gov Andrew_Harding@epw.senate.gov James_Willson@epw.senate.gov	(202) 224-6176
Senate EPW – Minority	Gabrielle_Batkin@epw.senate.gov Christophe_Tulou@epw.senate.gov Elizabeth_Mabry@epw.senate.gov	(202) 224-8832
Senate EPW W&W S/C – Majority	Joe_Brown@boozman.senate.gov	(202) 224-4843
Senate EPW W&W S/C – Minority	Radha_Adhar@duckworth.senate.gov	(202) 224-2854
Senate ENR – Majority	chuck_kleeschulte@energy.senate.gov lucy_murfitt@energy.senate.gov Colin_hayes@energy.senate.gov	(202) 224-4971
Senate ENR – Minority	david_brooks@energy.senate.gov	(202) 224-4971
House Appropriations Interior S/C – Majority	darren.benjamin@mail.house.gov	(202) 225-3081
House Appropriations Interior S/C – Minority	rita.culp@mail.house.gov Jocelyn_hunn@mail.house.gov	(202) 225-3481
House Natural Resources – Majority	erica.rhoad@mail.house.gov william.ball@mail.house.gov todd.ungerecht@mail.house.gov parish.braden@mail.house.gov Christopher.Santini@mail.house.gov Brandon.Miller@mail.house.gov Melissa.Beaumont@mail.house.gov SYi@mail.house.gov	(202) 225-2761
House Natural Resources – Minority	Matt.Strickler@mail.house.gov brandon.bragato@mail.house.gov sarah.lim@mail.house.gov daniel.torrez@mail.house.gov	(202) 225-6065
Senate Agriculture Committee – Majority	Andrew_Vlasaty@ag.senate.gov; DaNita_Murray@ag.senate.gov; James_Glueck@ag.senate.gov	
Senate Agriculture Committee – Minority	Sean_Babington@ag.senate.gov mary_olive@ag.senate.gov	

House Agriculture Committee – Majority	Stacy.Revels@mail.house.gov; patricia.straughn@mail.house.gov	
House Agriculture Committee – Minority	Anne.Simmons@mail.house.gov; keith.jones@mail.house.gov	

SECTION VI: SOCIAL MEDIA PLAN

21. How will social media be used to help in messaging to target audiences and achieve communications goals?

N/A

SECTION VII: PRIMARY POINTS OF CONTACT

22. Media coordinators *(For national-level plans, list at least one person from HQ Public Affairs and others from region/program if appropriate. For regional-level plans, only regional coordinators are required. Enter name, email and phone)*

Public Affairs, FWS HQ, Brian Hires, brian_hires@fws.gov, 703-358-2191

23. Congressional coordinators (*For national-level plans, list at least one person from HQ Public Affairs and others from region/program if appropriate. For regional-level plans. only regional coordinators are required. Enter name, email and phone)*

Alyssa Hausman, HQ CLA, Alyssa_Hausman@fws.gov, 703-358-2275

24. Social media coordinators *(Enter name, email and phone)*

N/A

25. Program communications POCs *(Enter name, email and phone)*

Gina Shultz, gina_shultz@fws.gov, 703-358-1985

26. Subject matter experts available for interview *(Must be approved by HQ Public Affairs for an HQ-led announcement or by Regional Public Affairs for region-led announcement. Enter name, email and phone)*

Gina Shultz, gina_shultz@fws.gov, 703-358-1985

27. Additional technical experts for reference *(Enter name, email and phone)*

Gina Shultz, gina_shultz@fws.gov, 703-358-1985

28. Are there any non-FWS points of contact for this action? *(Enter name, organization, role, email and phone)*

SECTION VIII: DOCUMENT INFO

29. Created by **Date created**

Brian Hires	8/31/2017

30. Edited by **Date edited**

Gavin Shire	9/8/17
Alyssa Hausman	9/14/17
D.L. Hobbs	09/20/2017
Craig Aubrey	10/10/2017

APPENDIX: ADDITIONAL BACKROUND INFORMATION AND MATERIALS

DO NOT PUT OTHER MATERIALS SUCH AS FAQs, NEWS RELEASE OR TALKING POINTS IN THIS SECTION. KEEP THOSE AS SEPARATE DOCUMENTS.

(Consider the following: What is the historical context? Does this relate to other issues that may not immediately be apparent (consider other programs and regions)? Is there a scientific basis to this issue? If so what is it?)

The Service will work with registrants to identify labeling and use modifications such as:

- Modify pesticide use for more localized applications
- Clarify pesticide use areas by eliminating places not sprayed, such as high elevation, desert ecosystems, etc.
- Increase buffers to reduce spray drift
- Equipment improvements
- No spray zones for highly endangered and endemic species
- Clarify adulticide (pesticide uses targeting adult mosquitos) and wide area use areas
- create partnerships for maintaining or increasing natural areas near agriculture
- Work with Industry to set up some field monitoring and collection of usage data

Primary Use and Effects of Three Insecticides Studied

Chlorpyrifos

- USES – Agricultural crops, orchards and vineyards, pasture, managed forests, and non-agricultural uses including right of ways and developed areas (e.g. public parks, golf courses). Also used, with no geographic and few temporal restrictions for, adult mosquito control and wide area use as ant bait and foliar spray. Other uses: cattle ear tags, seed treatment, granular formation, bait
- EFFECTS –
    - High overlap between chlorpyrifos use sites and species' ranges.
    - Can result in mortality, sublethal effects and/or indirect adverse effects to listed, proposed and candidate species.
    - Can remain in the environment for weeks to months after application, resulting in continuing effects after application

Malathion

- USES - Various agricultural and non-agricultural uses including crops, orchards and vineyards, pasture, and developed areas (e.g. residential, public parks). Can be purchased by the public for home use. Used for adult mosquito control with no geographic restrictions.
- EFFECTS –
    - High overlap between malathion use sites and species' ranges. Can result in mortality, sublethal effects and/or indirect adverse effects to listed, proposed and

candidate species.
- For all taxa, exposure to malathion could result in indirect effects to prey resources, particularly for species that consume invertebrates.
- Similarly, listed plants would experience indirect effects from loss of pollinators.
- For mosquito adulticide, high mortality to invertebrates over 100% of range based on lack of label restrictions. For other taxa, direct effects were more limited, but indirect effects for insectivorous species expected.
- Can remain in the environment up to a month after application, resulting in continuing effects to species post application.

Diazinon

USES - Due to risk to human health and the environment, use of diazinon was severely restricted in 2004. Remaining uses are limited to select crops, orchards, vineyards and nurseries. Can also be used in cattle ear tags.

EFFECTS -
- Compared to the other two pesticides, less overlap between diazinon use sites and species' ranges
- High toxicity for all taxa. In general, regardless of use site, exposure from diazinon to listed animal species often resulted in mortality and indirect effects to food sources.
- Similarly, listed plants would experience indirect effects from loss of pollinators.
- Due to high toxicity, effects predicted from spray drift onto adjacent use sites for many terrestrial species.
- Can remain in the environment for weeks to months after application, resulting in potential effects to species post application

Effects of Three Pesticides on Plants
- Most significant impact on plants is the indirect loss of pollinators. (The vast majority of listed plants are pollinated by insects.)
- Substantial overlap for chlorpyrifos and malathion uses, especially 100% overlap for adulticide and wide area use
- [redacted]

Summary of Draft Biological Opinion Conclusions for Three Pesticides

	Species			Critical Habitat		
	Jeopardy	No Jeopardy	NLAA*	Ad Mod	No Ad Mod	NLAA*
Chlorpyrifos	[redacted]					
Malathion						
Diazinon						

* *Not Likely to Adversely Affect*

DEFINITION OF TERMS AND CONCEPTS

Jeopardize the continued existence of means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.

Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features.

Reasonable and prudent alternatives - recommended alternative actions identified during formal consultation that can be implemented in a manner consistent with the intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Director believes would avoid the likelihood of jeopardizing the continued existence of listed species or the destruction or adverse modification of designated critical

habitat. [50 CFR §402.02]

Reasonable and prudent measures - actions the Director believes necessary or appropriate to minimize the impacts, i.e., amount or extent, of incidental take. [50 CFR §402.02]

Exhibit 12

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

OCT 15 2018

Ms. Marietta Echeverria
Director, Environmental Fate and Effects Division
Office of Pesticide Programs
Division Mail Code 7507P
U.S. Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, D.C. 20460

Dear Ms. Echeverria:

On March 29, 2018, the U.S. Fish and Wildlife Service (Service) received the U.S. Environmental Protection Agency's (EPA) "National and State Use and Usage Summary for Malathion" in response to the Service's request for additional information to complete formal consultation under section 7(a)(2) of the Endangered Species Act (ESA) involving EPA's re-registration of this pesticide. Since that time, we have worked with EPA, the U.S. Department of Agriculture (USDA), and the National Marine Fisheries Service (NMFS) to evaluate use and usage data for incorporation into the consultation. In addition, we have continued to work with the EPA, USDA, and NMFS to identify and obtain additional sources of data that could inform the consultation. We anticipate that these efforts will help improve the consultation and result in a biological opinion (BO) that more accurately reflects those effects that are reasonably certain to occur to ESA-listed species and critical habitat as a result of re-registering malathion.

As we have discussed, additional time is required to review the available use and usage data, assess whether it can be further refined at a more granular scale, and incorporate such data in our effects analysis. Therefore, we are requesting an extension of the consultation period in accordance with 50 C.F.R. 402.14(e) and ESA Section 7(b). The Service estimates that a draft biological will be released to EPA for its review and release for public comment by April 2020 and that the final biological opinion will be issued by March 2021.

To complete this process in the timeframe specified, we assume collaboration between the Federal Agencies will continue, with specific assistance from EPA in refining the action area, calculating the area of overlap for each species, familiarizing Service staff with the mechanics, structure, and function of the MagTool, and compiling public comments on the draft BO.

The Service will also continue to work with the malathion technical registrants that EPA has identified as the "applicants" for purposes of this consultation and as defined in the ESA's implementing regulations at 50 CFR 402.02. Pursuant to section 7(b) of the ESA, the Service and EPA may agree to this extension, provided that the consent of the applicants is obtained. Accordingly, we are also be seeking the applicants' consent to this extension.

We look forward to receiving your response to this request for an extension. If you have any questions or concerns about this request or the consultation process in general, please feel free to call me at 202-208-4646 or Deputy Assistant Director Gina Shultz at 703-358-1985.

Sincerely,

Gary Frazer
Assistant Director - Ecological Services

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IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

CENTER FOR ENVIRONMENTAL HEALTH, et al.,

Plaintiffs,

v.

ANDREW WHEELER, in his official capacity as the Acting Administrator of the U.S. Environmental Protection Agency, et al.,

Defendants,

and

CROPLIFE AMERICA,

Intervenor-Defendant.

Case No. 4:18-CV-03197-SBA

DECLARATION OF CHRISTOPHER SCOTT IRWIN

DECLARATION OF CHRISTOPHER SCOTT IRWIN

I, CHRISTOPHER SCOTT IRWIN, do hereby declare as follows:

1. I am over the age of eighteen, have personal knowledge of the following, and could competently testify thereto if called as a witness.

2. I currently live in Knoxville, Tennessee and am the past President of United Mountain Defense - where I worked also work as a staff attorney on watershed issues.

3. I have extensive training in watershed work. I have worked on a project regarding mussel populations in the Clinch river watershed. I have also worked as a Peace Corp volunteer where I did natural resources management in Africa. Much of the erosion control work I did in the Peace Corp revolved around water and how it interacted with soil. I also worked for the Watersheds Stewards Project in northern California doing watershed restoration and Chinook salmon restoration work, including underwater video. My work on salmon restoration further informed me on the dangers of pesticides for aquatic life. Additionally, I have experience as a white water guide on the Nolichucky and French Broad Rivers. Healthy watersheds are about stream health. All of these experiences have helped me understand and relate as to my interest in the importance of aquatic ecosystems and in mussel populations in particular.

4. I am a member of the Center for Biological Diversity, and I follow its work closely. As a member of the Center I assisted in the Endangered Species Mural Project. As part of that project I coordinated with Gerald Dinkins, Curator of Malacology (the study of mussels) at the McClung Museum of Natural History and Culture at the University of Tennessee, who helped with an endangered species mural focused on the freshwater mussel life cycle in Knoxville Tennessee. I am particularly proud of my work on this mural, which has

been well documented.[1]

5. I live next to the Tennessee River on Riverside Drive. Our river is a toxic, muddy industrial drainage ditch. I suspect pesticide run off has impacted the health of the river from both run off and manufacturers of pesticides. Even on the hottest day in July, people are afraid to swim in it because we all know how toxic and nasty it is. The polluted status of the Tennessee River, including contamination from pesticides, is very troubling to me because it affects my ability to enjoy the river and the ecosystem that is provides.

6. I am very concerned about the use of pesticide in agriculture in Tennessee. I know that agriculture has played a major role on the environment in Tennessee. The importance of agriculture is even represented on the state seal of Tennessee. I am concerned that crops that are heavily grown in Tennessee, such as soybeans, corn, cotton, and hay for livestock forage, will rely on pesticides that will harm threatened and endangered species.

7. Even though the Tennessee River is highly polluted, the Tennessee Basin as a whole in one of the most biologically diverse river systems for aquatic organisms in the United States. It harbors a high number of imperiled species with many fish and mussel species considered to be at-risk.

8. I have a long-standing interest in mussels. In addition to collecting and looking for them, I have been to the mussel population exhibit at the University of Tennessee, and years ago I interviewed one of their scientists at the mussel lab.

9. I have an intense interest in the impacts of pesticides on mussel populations as

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[1] Mike Blackerby, Knoxville News Sentinel, "A mural with mussel: New greenway artwork highlights area's biodiversity", July 11, 2016, http://archive.knoxnews.com/news/local/a-mural-with-mussel-new-greenway-artwork-highlights-areas-biodiversity-374bb65a-c91f-2aa4-e053-01000-386216471.html/

they are interesting species as well as indicator species for stream health. I grew up as a child collecting and studying mussel populations on the Tennessee River and surrounding tributaries. I would bring home dead shells to my family several times a week. My Grandfather lived on the banks of the Tennessee River. Growing up I spent countless hours collecting dead mussel shells and observing them in streams flowing into the River. I lost many a shoe deep in the muck wading out to find my shells.

10. I have successfully observed mussels in the wild countless times. I live right next to the Tennessee River, so I visit these areas weekly, sometimes daily. My family has been in East Tennessee for at least six generations and we have fished, swum, and waded all over. One of the very first things I look for when on the water are the shells of mussels. I like getting on river banks during low water and during that time I'm always looking to see if I can find mussel shells. The Clinch River, where I was involved in a project involving mussels, has more species of endangered freshwater mussels than any other river in North America. I also enjoy visiting the Holsten and French Broad rivers in Tennessee.

11. Additionally, I have looked for point source discharges of pollution into waterways and done conductivity testing with a YSI meter to test for water quality and water pollution all over east Tennessee. When I conduct water quality monitoring mussel populations are one of the things I look for. I did this as both a volunteer and past staff attorney for United Mountain Defense (UMD).

12. I intend to keep visiting waterways in Tennessee for years to come, for both professional and personal reasons. I am the past President and a staff attorney for the UMD. The UMD's mission is to protect Tennessee waters, so I anticipate with certainty that I will continue to visit these areas for months, if not years to come. Additionally, I live next to the

Tennessee River, and my Aunt lives on the Tennessee River and owns marshland where I look for mussels.

13. Mussel populations are very important to me. I think they are neat. The history of mussels and the history of this region fascinate me. I have seen the specialized hook traps that used to be used to drag the sediment to capture them a hundred years ago. I have watched videos on the mussels describing how they used to make buttons out of them and I enjoy visiting the mussel exhibit at the University of Tennessee Museum. I have visited with Gerald Dinkens at the University of Tennessee many times and have viewed most, if not all, of the mussel species in the state as a result of those visits. I hope to see many of those mussels in the wild in their natural habitat as well.

14. I encounter mussels on at least a monthly basis and I look for them everywhere. I always get a little nervous when I do not see them in a stream. It makes me happy when I see them recovering in a stream or creek. Every time I find only dead small ones, I know the stream is sick and it makes me feel ill inside.

15. I am very concerned about threatened and endangered species living in Tennessee watersheds, especially mussels, and enjoying looking for them. For example, I like to look for the pink mucket (*Lampsilis abrupta*), and Cumberlandian combshell (*Epioblasma brevidens*), which are two of the species depicted on the mussel endangered species mural in Knoxville that I helped create.

16. I believe all life has equal validity and when I see yet another example of humans taking priority over all other life, like with the contamination of rivers with pesticides, I am saddened. I believe all species, including mussels, have the right to exist.

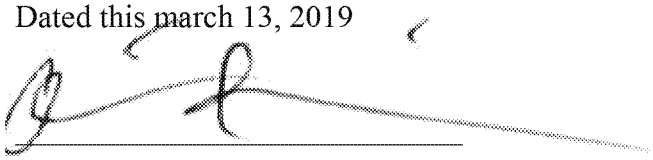
17. As an indicator species, mussels tell me how well we are doing at being

stewards of the earth and what kind of planet we are handing off to the next generation. The loss of mussels is one of the indicators as to how contaminated the river is. If it were cleaner, if it had healthier mussel populations, it would be a sign that the river is not as filthy as it looks.

18. In sum, I have environmental, recreational, and aesthetic interests in viewing federally protected wildlife, especially mussels that are negatively affected by the Environmental Protection Agency's failure to follow the Endangered Species Act and protect imperiled wildlife. My ability to freely visit waterways is harmed by the failure of our federal government to protect aquatic wildlife from pesticide pollution. I am less able to see wildlife that is rarer because of pesticide use and I would be likely to visit waterways in Tennessee more often if they were less polluted with pesticides and I was more likely to see endangered species, such as mussels there.

I declare under penalty of perjury that the foregoing is true and correct.

Dated this march 13, 2019



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IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

CENTER FOR ENVIRONMENTAL HEALTH, et al.,

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ANDREW WHEELER, in his official capacity as the Acting Administrator of the U.S. Environmental Protection Agency, et al.,

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and

CROPLIFE AMERICA,

Intervenor-Defendant.

Case No. 4:18-CV-03197-SBA

DECLARATION OF JEFFREY MILLER

DECLARATION OF JEFFREY MILLER

I, Jeffrey K. Miller, declare as follows:

1. I declare under penalty of perjury that the following is true and correct. The facts set forth in this declaration are based on my personal knowledge and if called as a witness, I could and would competently testify thereto under oath. As to those matters which reflect a matter of opinion, they reflect my personal opinion and judgment upon the matter.

2. I am a resident of Morro Bay, California.

3. I have been a member of the Center for Biological Diversity ("CBD") since 1995 and have been employed on the staff of CBD since 1998. I am currently employed full-time by CBD based out of the Oakland, California office. My duties include, among other things, research, assembling endangered species listing petitions, community organizing, assisting with various conservation campaigns, educational presentations, writing press releases, contacting media, and other work to protect and restore endangered and threatened species and their habitats, primarily in California.

4. As an employee of CBD, I have personally been involved in CBD's Pesticides Reduction Campaign. Because of EPA's failure to consult, much of my time and CBD's resources have been diverted towards authoring a series of reports detailing the effects of pesticides on Endangered Species Act ("ESA") listed species. In the absence of the ESA consultation analysis CBD has had to analyze on its own the harmful effects of pesticides on endangered species, including, but not limited to, determining what species were most harmed by pesticides, which pesticides posed the greatest harm to ESA listed species, what steps could be taken to educate the public and decision-makers about the threats posed by pesticides to ESA

listed species, and what steps could be taken to counteract the environmental harms posed to ESA listed species from EPA's failure to consult.

5. In 2004, CBD released the first of two reports I helped publish on pesticide use and endangered species. *Silent Spring Revisited: Pesticide Use and Endangered Species* analyzed the effects on endangered species of EPA's registration of pesticides.[1] The report analyzed EPA's continued failure to enforce the ESA's Section 7 Consultation requirements and how that illegal action affected ESA listed species. As noted in the report,

> Although the EPA by law is required to consult with the U.S. Fish and Wildlife Service on pesticide registration, it has failed to complete a single consultation in the last ten years despite repeated formal requests from the wildlife agency and the unambiguous requirements of the Endangered Species Act.

6. *Silent Spring Revisited* analyzed the effects pesticides have on ESA listed species so that the public was more aware of these issues, something the EPA was supposed to do. For example, the report discusses kit fox poisoning by rodenticides approved by the EPA and the effects rat poisons could have on the species. The report also analyzed the effects of pesticides on the southwestern willow flycatcher (*Empidonax traillii extimus*) noting that pesticides pose a threat to the species' food base. The report also discusses the biological effects of pesticides on imperiled species, including endocrine disruption, sexual deformities and other reproductive anomalies. The report acts as a replacement to the public for the Biological Opinion they were denied when EPA failed to consult under the ESA.

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[1] https://www.biologicaldiversity.org/publications/papers/Silent_Spring_revisited.pdf.

7. In 2006, CBD issued the report *Poisoning Our Imperiled Wildlife: San Francisco Bay Area Endangered Species at Risk from Pesticides*.[2] CBD was forced to divert its resources and expend resources beyond those that are normally expended to analyze the outcome of EPA's illegal activity and educate the public about the impacts of EPA's failure to engage in consultation, which would have studied and mitigated the effects of pesticides on endangered species. The report repeatedly emphasized the systemic failure at EPA to engage in consultation and how that impacted ESA listed species. For example,

> By failing to consult with the USFWS and NMFS, which have the statutory authority and responsibility to cooperate with other agencies in assessing impacts of agency actions and authority on threatened and endangered species, the EPA neglects to comply with federal law or even develop the information base for making the wise and cautious decisions about our most endangered wildlife.

8. *Poisoning Our Imperiled Wildlife* examined the risk that toxic pesticides pose to endangered species in the nine Bay Area counties: Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo and San Francisco. *Poisoning Our Imperiled Wildlife* analyzed and highlighted the dangers posed by EPA's violations of the ESA in registering pesticides. The report detailed how the use of pesticides in the Bay Area is of concern for the California red-legged frog, California tiger salamander, Delta smelt, valley elderberry longhorn beetle and Pacific salmonid species. It further studied the Bay Area's use of pesticides by County and areas where that use was occurring. The report compared that usage data to critical habitat of ESA listed species. After analyzing the exposure to and effects on species the report made a list of

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[2] https://www.biologicaldiversity.org/publications/papers/bayareapesticidesreport.pdf

recommendations to the public. For example, the report encouraged the public to use bio-pesticides to control insect pests and to hand weed and mulch their gardens.

9. In addition to helping to write and publish the two pesticide reports, I have been forced to spend my time doing extensive advocacy, outreach and public education around the harmful effects of pesticides on imperiled wildlife. CBD, the public, and myself have all been denied the important scientific and informational reports that come along when agencies consult under the ESA. Thus, CBD diverted resources, so I could write and distribute nearly 20 press releases on CBD pesticide actions, resulting in nearly 150 newspaper articles, and TV and radio interviews on CBS, KQED and others. I also helped organize public comments to the EPA on pesticides and pesticide registrations through CBD action alerts.

10. From 2003-2008, approximately 25% of my time was dedicated to addressing the impacts of pesticides on endangered species and providing information to the public about these impacts, due to the EPA's failure to consult. The significant portion of my time would have been dedicated to other environmental and species conservation efforts such as the following: preparing more federal and state Endangered Species Act listing petitions; developing and implementing the "Get the Lead Out" campaign to reduce use of toxic lead ammo; developing and implementing a campaign to make wind farms safer for golden eagles; advocating against urban sprawl development projects in endangered species habitats through a range of media, outreach, research, and administrative advocacy tools; efforts to reduce the negative environmental effects of cattle grazing practices on public lands; work to increase fish passage and habitat protections for California salmon and steelhead streams; review, analysis, and comments on the development of Habitat Conservation Plans to ensure maximum protections for imperiled species; campaigns and events focused on endangered species in the San Francisco

Bay Area; and developing and implementing state campaigns to protect freshwater turtles from overharvest. Specific tasks for most or all of these campaigns would have been preparing educational materials for the public and our web site, doing public outreach, coordinating with other conservation groups, working with scientists, preparing press releases and fact sheets, talking with reporters, attending public hearings, submitting comments, and preparing action alerts to engage the public with decision makers on issues involving imperiled species.

11. I am also the founder and Director of the Alameda Creek Alliance, a community watershed group dedicated to protecting and restoring the natural ecosystems of the Alameda Creek watershed. To restore the Alameda Creek watershed's native wildlife, plants, habitats, and ecosystems, the Alameda Creek Alliance focuses its efforts on restoring steelhead trout and salmon, indicator species of watershed health.

12. I have worked on conservation campaigns for a wide array of imperiled wildlife species in California, including native fish, birds, raptors, amphibians, reptiles, carnivores, ungulates, rodents, insects and plants. I have written or co-written many federal Endangered Species Act listing petitions, including petitions for the mountain yellow-legged frog (*Rana muscosa*), green sturgeon (*Acipenser medirostris*), Pacific lamprey (*Entosphenus tridentatus*), Delta smelt (*Hypomesus transpacificus*), longfin smelt *(Spirinchus thaleichthys*), Clear Lake hitch (*Lavinia exilicauda chi*), foothill yellow-legged frog (*Rana boylii*), and Siskiyou Mountains salamander (*Plethodon stormi*). I have also written, or co-written state California Endangered Species Act listing petitions for the western burrowing owl (*Athene cunicularia hypugaea*), Delta smelt, longfin smelt, mountain yellow-legged frog, Clear Lake hitch, foothill yellow-legged frog, and Cascades frog (*Rana cascadae*).

13. Personally, I am an avid amateur naturalist and birdwatcher and frequently visit habitat for rare and endangered birds and other wildlife throughout California. To look for and observe such wildlife, I often visit habitat throughout the Central Valley, San Francisco Bay Area and Bay-Delta, the central California coast, and Southern California. I also enjoy searching for and observing other species while birdwatching. In 2018 I took up wildlife and bird photography, in order to be able to better share the beauty and importance of California's native and imperiled bird and wildlife species with others.

14. I go birdwatching almost every day somewhere in California. In the last decade, I have seen 531 different species of birds in California alone. I lead annual birdwatching trips for the public at the Point Reyes Birding and Nature Festival in Marin County, and at the California Bird Festival at Morro Bay in San Luis Obispo County. I also participate annually in several Christmas bird counts, volunteer-based citizen science survey efforts coordinated by the Audubon Society to promote bird conservation and assess long-term trends in winter bird populations. I have been the co-compiler for the Eastern Alameda County Christmas Bird Count since 2009; and also regularly participate in the Point Reyes Peninsula, Western Sonoma County, Morro Bay and Carrizo Plain Christmas bird counts.

15. Through my professional work and personal hobbies, I have become very concerned about the impacts of pesticides on endangered and threatened species. With many endangered species already suffering from habitat loss, the effects of climate change, low population numbers, and other threats, harm from inappropriate use of toxic pesticides in and near habitat for imperiled species could push these species closer to extinction or impede their recovery. I am concerned that malathion will pose a significant threat to the recovery and continued existence of threatened and endangered species.

16. I am aware that malathion is approved for a range of agricultural and other uses. I know that species I enjoy and look for live where these pesticides are going to be sprayed. Their habitats overlap with where the spaying is going to occur. I understand that these pesticides are likely to degrade their habitat and put their existence at risk. These pesticides will also runoff into waterways and drift into nearby areas further affecting species I have professional, recreational, aesthetic, and spiritual interests in.

Salmon and Steelhead Trout

17. I have been involved in the restoration of salmon and steelhead trout (*Onchorhynchus mykiss*) throughout California since 1996. I worked for and continue to volunteer with the Salmon Protection and Watershed Network in Marin County, which protects and restores coho salmon (*Oncorhynchus kisutch*) and steelhead trout and their habitat in Lagunitas Creek and Olema Creek. I am a member of the Russian Riverkeeper, which works to protect chinook salmon (*Oncorhynchus tshawytscha*), coho salmon and steelhead trout in the Russian River in Sonoma County. I am the founder and Director of the Alameda Creek Alliance, and for the past 21 years have worked to protect steelhead trout and restore their habitat in Alameda Creek in Alameda County. I am on the Board of Directors of Beyond Searsville Dam, an organization working to protect steelhead trout in San Francisquito Creek in San Mateo and Santa Clara counties. Since 1998 I have worked for CBD on numerous campaigns throughout California to protect coho salmon, chinook salmon, steelhead trout, green sturgeon, and native Bay-Delta fishes and their habitats. In 2007 and 2009 I received the Fishsniffer's "Leaping Steelhead" conservation awards for grassroots efforts to restore Alameda Creek and efforts to protect the San Francisco Bay-Delta and California's fisheries. In 2011 the East Bay Express

voted me "Best Environmentalist" for my work with CBD and Alameda Creek Alliance, as part of their annual Best of the East Bay awards.

18. I have visited Central Valley rivers and waterways to look for and view spring run chinook salmon and steelhead trout, including areas that are designated as critical habitat for these salmonids, such as lower Sacramento River, Feather River, Yuba River, Deer Creek, Yolo Bypass, and the San Francisco Bay-Delta. In 2009 I visited Butte Creek, an important spawning area for Central Valley spring run chinook salmon. I have rafted down the Tuolumne River several times, an important spawning river for Central Valley steelhead. I plan to continue to visit these places to look for and view spring run chinook salmon and steelhead trout. I have plans to visit the Sacramento River and SF Bay-Delta in spring and summer of 2019.

19. I have visited numerous California coastal rivers and creeks to look for and view coastal chinook salmon and steelhead trout, including areas that are designated as critical habitat for these salmonids. These include Redwood Creek, Mattole River, Eel River, Albion River, and Russian River which harbor the California coastal chinook salmon population. I have visited Usal Creek, Albion River, Navarro River, Gualala River, Russian River, and Lagunitas Creek where the central California coast coho salmon population occurs. I have visited Redwood Creek, Mattole River, Eel River, and Gualala River where the Northern California coast steelhead trout population occurs. I have visited many streams that contain the central California coast steelhead trout population, including the Russian River, Lagunitas Creek, Olema Creek, Pine Gulch Creek, Pilarcitos Creek, Pescadero Creek, San Gregorio Creek, San Francisquito Creek, and Alameda Creek. I have also visited streams that contain the south-central California coast steelhead trout population, including the Carmel River, Big Sur River, Salinas River, Arroyo Seco, San Carpoforo Creek, Santa Rosa Creek, Morro Creek, Chorro Creek, SLO Creek,

and Arroyo Grande Creek. I plan to visit these places again this year and for years to come to view coastal chinook salmon and steelhead trout. I have plans to visit the Russian River, Eel River and Lagunitas Creek in spring of 2019; I live nearby all of the San Luis Obispo County creeks, and plan to visit them regularly in the spring of 2019.

20. I have lived along the Albion River, Russian River, Pine Gulch Creek, and Lagunitas Creek and currently live near Morro Creek and Chorro Creek. I have kayaked on the Albion River, Navarro River, Russian River, Gualala River, and Lagunitas Creek, and I regularly raft down the Eel River. I will continue to visit these places in hopes to see salmon and steelhead trout. I have plans to raft down the Eel River in April 2019; and to visit my former home along the Russian River the same month.

21. In my capacity at CBD and personally I have worked on numerous campaigns to protect these salmonids and streams which are their critical habitat from impacts from logging, urban development, water withdrawals, pesticides, dams, and livestock grazing. These efforts included working with other conservation, fishing, and tribal groups, and scientists, writing press releases, submitting comments on projects and permits, and preparing web materials and action alerts.

22. This year Alameda Creek Alliance and I helped capture and tag adult steelhead in lower Alameda Creek and helped transfer them to suitable spawning habitat. This is a part of an effort to help construct a fish ladder in the lower creek to connect wild steelhead with former spawning and rearing habitat areas. The Alliance is helping restore wild steelhead spawning population in the largest local tributary to San Francisco Bay. I plan on continuing to work in Alameda Creek to restore habitat and ensure a safe fish passage.

23. I am concerned that malathion will be applied in and around chinook salmon and steelhead trout habitats without regard to the species' recovery. Chinook salmon and steelhead trout habitats are in and nearby many agricultural operations that are likely to apply malathion. I am aware of the problem of pesticide runoff in watersheds in the Central Valley and other locations. I am concerned that the use of these and similar pesticides will harm and kill chinook salmon and steelhead trout directly and inadvertently.

North American Green Sturgeon – Southern Population

24. In my capacity at CBD I wrote a formal listing petition for protection of green sturgeon under the federal Endangered Species Act in 2001. Because of the petition, the National Marine Fisheries Service listed the southern green sturgeon population as a federally threatened species in 2006. I assisted in CBD campaigns and a lawsuit which led to designation of critical habitat for southern green sturgeon in 2009; ESA "take" regulations in 2010; and a formal recovery plan for southern green sturgeon, finalized in 2018. CBD intervened and successfully fought off legal efforts by developers and water agencies to strip critical habitat protections for southern green sturgeon. I was involved in writing comments, working with scientific experts on the species, organizing other conservation groups, and writing 11 press releases, web site materials and action alerts for these protective efforts.

25. I frequently visit river habitat for the southern population of green sturgeon in the Sacramento River and also visit northern green sturgeon spawning habitat in the Rogue River and Klamath River in late spring and early summer to attempt to see green sturgeon in the wild. I regularly raft along the Rogue and Klamath Rivers in areas where green sturgeon are known to occur. Specific locations I have visited to attempt to see southern green sturgeon spawning include Balls Ferry, Red Bluff Diversion Dam, Todd Island, Woodson Bridge State Recreation

Area and Hamilton Bend on the Sacramento River, and along the lower Feather and Yuba Rivers. Unfortunately, I have yet to encounter the rare green sturgeon in the wild and have only seen green sturgeon at the Monterey Bay Aquarium. I plan to continue to return to these rivers annually.

26. I am concerned that malathion will be applied in and around green sturgeon's habitat without regard to the species' recovery. These pesticides are likely to adversely affect the species' recovery and frustrate all the work CBD and myself have done to help preserve the species. The North American green sturgeon's habitat is in and nearby many agricultural operations that are likely to apply malathion. I am concerned that the use of these and similar pesticides will harm and kill North American green sturgeon directly and inadvertently.

Delta Smelt

27. In my capacity at CBD I helped prepare petitions to increase federal and state Endangered Species Act protections for Delta smelt. In 2006 we submitted a petition to uplist Delta smelt from threatened to endangered under the federal Endangered Species Act. In 2007 we submitted a petition to uplist Delta smelt from threatened to endangered under the California state Endangered Species Act. In 2009 our petition was granted, and Delta smelt was protected as endangered under the California state Endangered Species Act. I was involved in working with other conservation groups, and writing 13 press releases, web site materials and action alerts for these protective efforts. My recent visits to the Delta included Bethel Island, Brannan Island State Recreation Area, Isleton, lower Mokelumne River, Woodbridge Ecological Reserve, and Suisun Slough in 2016; and Cosumnes River Preserve and Rio Vista in 2018. I plan to make future trips to the Delta to view and look for Delta smelt, including in spring of 2019.

28. I am concerned that malathion will be applied in and around Delta smelt's habitat without regard to the species' recovery. These pesticides are likely to adversely affect the species recovery and frustrate all the work CBD and myself have done to help preserve the species. The Delta Smelt's habitat is in and nearby many agricultural operations that are likely to apply malathion. I am concerned that the use of these and similar pesticides will kill and harm the Delta Smelt directly and inadvertently.

Valley Elderberry Longhorn Beetle

29. The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is listed as a threatened species under the federal Endangered Species Act.

30. The valley elderberry longhorn beetle is an attractive red and black beetle that lives in riparian zones throughout California's Central Valley, from Redding to Fresno. The valley elderberry longhorn beetle's entire life cycle is associated with elderberry trees. Females lay eggs in the bark of the tree, and the larvae hatch and burrow into the stems. For the first one-to-two years of their lives, the larvae eat the elderberry tree's interior wood as their sole source of food. Adults emerge in the spring through distinctive exit holes and feed on the foliage until they mate.

31. Elderberry trees can be found in riparian forests along rivers and streams in the Sacramento Valley and San Francisco Bay-Delta. Over ninety percent of such riparian forests have been cleared in the last century for agricultural and urban development. Pesticide use on otherwise undisturbed areas has also degraded the quality of riparian habitat.

32. I have seen the related and more common California elderberry longhorn beetle on several occasions. While birdwatching in the Central Valley in 2009, I found longhorn beetle drill holes in elderberry trees that were likely made by valley elderberry longhorn beetles, based

on their location, specifically along the American River Parkway adjacent to the lower American River. I subsequently began looking for longhorn beetle drill holes in elderberry trees while birdwatching within other suitable habitat for the valley elderberry longhorn beetle in the Central Valley, along the Cosumnes River, Putah Creek, the Llano Seco Unit of the North Central Valley Wildlife Management Area and the Colusa National Wildlife Refuge.

33. I have also visited the Sacramento River in April 2016; Cosumnes River Preserve in February 2018; Yolo Bypass in April 2018; and the American River in February 2019 in search of the valley elderberry longhorn and plan on to continue to search for the beetle in future planned trips. I regularly visit Central Valley rivers and riparian areas with valley elderberry longhorn beetle habitat, about three-to-four times a year and plan to continue doing so in the future for birdwatching and salmon restoration activities. Additionally, I regularly attend an annual birdwatching festival in the Central Valley that involves spending time in the valley elderberry longhorn beetle's habitat.

34. In 2014, I submitted regulatory comments for CBD and helped put out two press releases to publicize the threatened removal of Endangered Species Act protections for the valley elderberry longhorn beetle. CBD's advocacy and publicity with the Xerces Society for Invertebrate Conservation prevented the premature delisting of this beetle species, which is still an imperiled species. Successful recovery of the valley elderberry longhorn beetle will inspire and promote similar efforts for other imperiled native species.

35. I am concerned that malathion will be applied in and around the valley elderberry longhorn beetle's habitat without regard to the beetle's recovery. The beetle's habitat is in and nearby many agricultural operations that are likely to malathion to control other insects. I am concerned that the use of these and similar pesticides will harm or kill valley elderberry longhorn

beetles directly or inadvertently, as the killing of non-target insects by insecticides is a common phenomenon.

36. I plan to look for the valley elderberry longhorn beetles in the wild, but even if I do not observe the beetle, I am happy knowing that it exists in the wild. I enjoy knowing that the beetle is recovering as a listed species and I look forward to its full recovery. If the remaining populations of the valley elderberry longhorn beetle were extirpated because of pesticides, the ecological value of the Central Valley's riparian habitat and my appreciation of these areas would be diminished.

San Joaquin Kit Fox

37. The San Joaquin kit fox (*Vulpes macrotis mutica*) is listed as an endangered species under the federal Endangered Species Act.

38. The San Joaquin kit fox is the smallest fox in North America, and is an adorable creature with distinctive large ears and long legs.

39. The kit fox once ranged throughout the San Joaquin Valley, but now resides only at the edges, from southern Kern County in the south to Alameda, Contra Costa, and San Joaquin counties in the north.

40. I was lucky enough to see a San Joaquin kit fox out in the open during daylight hours on a memorable occasion near Tracy, California in 2011. A San Joaquin kit fox was running across an open field next to a road I was driving on. In my 56 years in California, I have seen hundreds of foxes (including native gray foxes, introduced red foxes and endemic island foxes), but I could immediately tell this was a San Joaquin kit fox. I noticed its oversized ears, small size, long bushy tail and distinctive way of moving, and knew I was in the kit fox's

restricted habitat area. Seeing this kit fox was an amazing experience given how rare the species is. It was exciting to see one of California's signature endemic species in the wild.

41. I also recently got to see three San Joaquin kit foxes at Carrizo Plain, once in June 2018 and twice in December 2018. I had a close encounter with a San Joaquin kit fox at Carrizo in June 2018, and got close-up photos included below.

42. I have visited Carrizo Plain in February 2016, June 2018, and twice in December 2018. I have trips planned to return to Carrizo Plain in March 2019 and April 2019. I have also looked for kit foxes in suitable habitat recently in Kern County (Lost Hills and Kern National Wildlife Refuge) in March and December 2018; and at Camp Roberts in July 2016 and May 2018.

43. I often visit San Joaquin kit fox habitat while birdwatching in the Central Valley, San Joaquin Valley, Carrizo Plain, Camp Roberts and Fort Hunter Liggett. I plan to continue regularly visiting such habitat in the future. I also regularly visit kit fox habitat in eastern Alameda County in Altamont Pass and Corral Hollow, up to ten times each year and will continue to do so.

44. I am concerned that malathion will be applied in and around the San Joaquin kit fox's habitat without regard to its recovery. The kit fox's habitat is in and nearby many agricultural operations that are likely to apply these pesticides to control insects.

45. I plan to look for San Joaquin kit fox in the wild again, but even if I do not observe the kit fox, I am happy knowing that these animals exist in the wild. I look forward to the kit fox's full recovery under the protections of the Endangered Species Act. If the small number of remaining kit foxes were reduced or extirpated because of the use of malathion, the ecological value of the Central Valley's natural environment and my appreciation of these areas would be diminished.

Western Yellow-Billed Cuckoo

46. I recently was lucky enough to see the elusive yellow-billed cuckoo (*Coccyzus americanus*) - in October 2016 in Florida and in May 2018 in Texas. These sightings made me want that much more to see the western, or California, subspecies of yellow-billed cuckoo. I have been birdwatching in suitable western yellow-billed cuckoo habitat searching for this bird at the Kern River Preserve in July 2017 and July 2018; and along the Sacramento River in February 2019. I plan to return to the Kern River Preserve and Sacramento River this spring and summer to look again for the cuckoo.

Least Bell's Vireo

47. I first became interested in the least Bell's vireo (*Vireo bellii*) and southwestern willow flycatcher (*Empidonax trailii extimus*) in 1998, when I was part of CBD's campaign to force the U.S. Forest Service to amend its management plans for Southern California's four national forests to better protect riparian habitat for Bell's vireo and willow flycatcher. From 2010 to 2014 I was involved in CBD's successful campaign to reverse an Army Corps of

Engineers policy that would require stripping levees of vegetation that provides important habitat for imperiled California species, including the least Bell's vireo and southwestern willow flycatcher.

48. I saw my first least Bell's vireo in 2010. I have searched for least Bell's vireo in San Diego and the Tijuana River Valley area (September 2016, September 2017, and April 2018); in the Salton Sea area (February 2016, September 2016, September 2017, and April 2018); and in the Kern River drainage (July 2017 and July 2018). I have now seen least Bell's vireo four times. I plan to return to the Tijuana River Valley, Salton Sea, and Kern River drainage in 2019 to look for this bird.

Southwestern Willow Flycatcher

49. I saw my first southwestern willow flycatcher in 2009. I have since seen this species on 35 occasions while birdwatching in Mono County, the Kern River drainage, the central California coast, Salton Sea area, and Imperial Valley area. I recently looked for southwestern willow flycatcher in Inyo County and Mono County in 2017. I plan to look for this bird in 2019 along the eastern slope of the southern Sierras.

50. I am concerned that malathion will be applied in and around western yellow-billed cuckoo, least Bell's vireo, and southwestern willow flycatcher habitat without regard to the species' recovery. These pesticides are likely to adversely affect these species' recovery. These species live in and nearby many agricultural operations that are likely to apply malathion. They eat insects that will be killed by these pesticides, lessening their ability to find food and increase their chances of getting poisoned themselves. I am concerned that the use of these and similar pesticides will kill and harm these species directly and inadvertently. If the small number of these remaining species were reduced or extirpated because of the use of malathion, the

ecological value of the natural environment and my appreciation of these areas would be diminished.

California Tiger Salamander

51. I have a conservation and personal interest in the California tiger salamander (*Ambystoma californiense*). I have been involved in CBD's campaigns to secure protections under the state and federal Endangered Species Acts for California tiger salamander populations, and worked on press releases, reports, and securing public and expert comments to protect the species and educate the public about the decline of California tiger salamanders and the loss of their vernal pool habitats. I have also worked on many CBD and Alameda Creek Alliance efforts to stop or reduce urban development in tiger salamander habitat in the East Bay and in Sonoma County.

52. In 2009 I went out with a tiger salamander researcher at night to participate in surveys for the California tiger salamander at Jepson Prairie Preserve in Solano County. I have also seen tiger salamander larvae on several occasions in ponds in Sunol and Ohlone Regional Parks in Alameda County. I plan to return to look for California tiger salamander when I visit eastern Alameda County for the Eastern Alameda County Christmas Bird Count and as part of my work with the Alameda Creek Alliance.

53. I am concerned that malathion will be applied in and around California tiger salamander habitat without regard to the species' recovery. These pesticides are likely to adversely affect tiger salamander recovery since these salamanders live in and nearby many agricultural operations that are likely to apply malathion.

54. In summary, I have professional, recreational, aesthetic, and spiritual interests in the conservation and preservation of many imperiled native species in California, such as the

valley elderberry longhorn beetle, San Joaquin kit fox, Delta smelt, North American green sturgeon, chinook salmon, coho salmon, steelhead trout, western yellow-billed cuckoo, least Bell's vireo, southwestern willow flycatcher, California tiger salamander, and their habitats. I derive benefits from visiting, observing, and restoring intact natural riparian ecosystems which are habitat for some of these species, and my enjoyment of these habitat areas for recreational, professional, and spiritual purposes is dependent upon healthy ecosystems and wildlife populations.

55. As a lifetime conservationist, I have aesthetic, spiritual and moral interests in these species. It is important to me that these and other species survive and thrive in their natural habitat, whether or not I am able to encounter them. It is my belief that no wildlife species should be allowed to be driven extinct by the actions of humans and that no species should be allowed to go extinct if it can be prevented. My spiritual fulfillment comes from interacting with nature and protecting wild places, wildlife, and intact native ecosystems. The loss of these species will injure my aesthetic and spiritual enjoyment of native habitats in my home state. I believe that biodiversity has inherent value and it would be a moral and spiritual failure of our society to not protect our most vulnerable wildlife.

56. As a conservationist, I have a professional interest in protecting and recovering these species. The protection and recovery of these and other species are essential to my work to promote funding, take regulatory action, advocate, and organize citizen involvement in efforts to protect endangered species.

57. These interests are being harmed by the Environmental Protection Agency's failure to consult with the U.S. Fish and Wildlife Service on the impacts of malathion, which could poison, harm, kill, and further imperil these species and other endangered and threatened

species. The agency's failure to consult before registering these pesticides is contrary to federal law and contrary to the conservation and stewardship values of CBD and our society. The Environmental Protection Agency's failure to follow the law makes these species more vulnerable to habitat destruction, injury, death, and population declines. If these species decline or become extinct, the loss would deprive me of all the benefits I currently enjoy from their existence and recovery. Consultation could have resulted in more protective measures to ensure the conservation and recovery of these species, ensuring that my interests would be free from injury.

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed on March 19, 2019 at Morro Bay, California.

By: _____
Jeffrey Miller

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IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

CENTER FOR ENVIRONMENTAL HEALTH, et al.,

Plaintiffs,

v.

ANDREW WHEELER, in his official capacity as the Acting Administrator of the U.S. Environmental Protection Agency, et al.,

Defendants,

and

CROPLIFE AMERICA,

Intervenor-Defendant.

Case No. 4:18-CV-03197-SBA

DECLARATION OF JAMES D. WILLIAMS

DECLARATION OF JAMES D. WILLIAMS

I, James D. Williams, declare as follows:

1. I am over the age of 21 and currently reside in Gainesville, Florida, where I have lived for 31 years.

2. I have a PhD in Biology from the University of Alabama. I am retired from the U.S. Department of the Interior, U.S. Geological Survey, Biological Resources Division, and the Florida Fish and Wildlife Conservation Commission where my much of my work involved the biological research of aquatic species in the southeastern United States, especially as it related to the population and conservation status of those species. Previously, when I was a biologist for the U.S. Fish and Wildlife Service, I worked in the Endangered Species Office in Washington, DC, from 1974–1987 and was responsible for researching, evaluating, and proposing freshwater fishes for endangered and threatened status. I also served as the chief of the Biodiversity Branch, U.S. Fish and Wildlife Service and U.S. Geological Survey, in Gainesville, Florida. For approximately nine years I taught an annual workshop on freshwater mussels of the Apalachicola basin, Alabama, Florida, and Georgia. I have also received the Freshwater Mollusk Conservation Society Lifetime Achievement Award in recognition for singular accomplishments and long-term contributions that have advanced the conservation and science of freshwater mollusks at a national and international level. I am currently a research associate in the Florida Museum of Natural History.

3. I have authored over 175 publications, reports, presentations, or books with a primary focus on mussels and fishes of the southeastern United States. For example, I was recently an author on articles of the conservation status of freshwater mussels in the United States and

Canada. I was also primary author of the book "Freshwater Mussels of Florida" and "Freshwater Mussels of Alabama and the Mobile Basin in Georgia, Mississippi and Tennessee."

4. I have been a member of the Center for Biological Diversity since 2009. The Center is a nonprofit organization committed to the preservation, protection, and restoration of native species and the ecosystems upon which they depend. As a member of the Center, I participate in activities pertaining to endangered species issues. I helped organize the review of southeastern fishes and mussels included in a petition to the U.S. Fish and Wildlife Service to list those fishes and mussels under the Endangered Species Act. I also reviewed all the mussel taxa included in the petition, as well as some of the fishes. I rely upon the Center in part to represent my interests in protecting endangered species and their habitat, especially the aquatic species found in the United States.

5. I am particularly interested in the conservation of these aquatic species in the southeastern United States including the following:

Fishes

Percina antesella, Amber Darter
Cyprinella caerulea, Blue Shiner
Etheostoma wapiti, Boulder Darter
Etheostoma scotti, Cherokee Darter
Percina aurolineata, Goldline Darter
Acipenser oxyrinchus desotoi, Gulf Sturgeon

Mussels

Medionidus acutissimus, Alabama Moccasinshell
Elliptio chipolaensis, Chipola Slabshell
Medionidus parvulus, Coosa Moccasinshell
Amblema neislerii, Fat Threeridge
Hamiota altilis, Finelined Pocketbook
Medionidus penicillatus, Gulf Moccasinshell
Pleurobema taitianum, Heavy Pigtoe
Medionidus simpsonianus, Ochlockonee Moccasinshell
Pleurobema pyriforme, Oval Pigtoe
Elliptoideus sloatianus, Purple Bankclimber
Fusconaia rotulata, Round Ebonyshell

Hamiota subangulata, Shinyrayed Pocketbook
Pleurobema decisum, Southern Clubshell
Epioblasma penita, Southern Combshell
Ptychobranchus jonesi, Southern kidneyshell
Pleurobema georgianum, Southern Pigtoe
Ptychobranchus greenii, Triangular Kidneyshell
Epioblasma metastriata, Upland Combshell

6. I have worked in the southeastern United States, where these species occur, for the past 50 years. During this time I have sampled, studied, and published papers on most of the species listed in this declaration. I have observed these species and continue to participate in research projects involving most of them. I described or named 2 (*Etheostoma wapiti* and *Percina antesella*) of the 8 fishes listed in this declaration. As a research biologist I have participated in professional meetings evaluating conservation status of southeastern freshwater mussels and fishes, including all taxa listed in this declaration.

7. I also have an aesthetic interest in these species and take joy in knowing that we have incredible aquatic biological diversity in the southeastern United States. The fact that many of these species are declining and we have lost forever numerous species does detract from my enjoyment of our aquatic biodiversity.

8. I believe very strongly that we have a moral obligation to pass on to future generations the incredible diversity that we have. Our aquatic biological diversity has inherent value and we have the responsibility to protect these species. Humankind does not have the right to eliminate or drive to extinction any living species.

9. The use of pesticides in and around watersheds inhabited by these species is harmful and reduces the likelihood that I will be able to observe and study them in the future. The broad application of chemicals on agricultural lands and the subsequent runoff into aquatic systems inhabited by these species exposes them to various levels of these chemicals. I think the impacts

of pesticides are generally underestimated due to the pervasiveness and accumulative nature of some of the chemicals used. The fact that the Environmental Protection Agency has not thoroughly analyzed the chemicals and surfactants used in the application process for pesticides, how those pesticides affect ESA listed species, or consulted with the U.S. Fish and Wildlife Service and National Marine Fisheries Service is also of great concern.

10. I will return to the habitats of these species in the coming years as I complete various research projects on the biology, evolution, and conservation of these taxa. In 2014 I completed a book on the freshwater mussels of Florida, which involved visiting the habitats of 8 of the mussel species included this declaration (*Medionidus acutissimus*, Alabama Moccasinshell; *Elliptio chipolaensis*, Chipola Slabshell; *Amblema neislerii*, Fat Threeridge; *Medionidus penicillatus*, Gulf Moccasinshell; *Medionidus simpsonianus*, Ochlockonee Moccasinshell; *Pleurobema pyriforme*, Oval Pigtoe; *Elliptoideus sloatianus*, Purple Bankclimber; and *Hamiota subangulata*, Shinyrayed Pocketbook; *Fusconaia rotulata*, Round Ebonyshell; and *Ptychobranchus jonesi*, Southern kidneyshell). The remaining species (*Medionidus parvulus*, Coosa Moccasinshell; *Hamiota altilis*, Finelined Pocketbook; *Pleurobema taitianum*, Heavy Pigtoe; *Pleurobema marshalli*, Flat Pigtoe; *Pleurobema decisum*, Southern Clubshell; *Epioblasma penita*, Southern Combshell; *Pleurobema georgianum*, Southern Pigtoe; *Ptychobranchus greenii*, Triangular Kidneyshell; and *Epioblasma metastriata*, Upland Combshell) will be included as part of a study of the impacts of impoundments on freshwater mussels in the southeastern United States. In addition to these mussels, 2 fishes in this declaration (*Cyprinella caerulea*, Blue Shiner and *Acipenser oxyrinchus desotoi*, Gulf Sturgeon) will also be included in this study. Rivers inhabited by these species will be visited to evaluate existing habitat and impacts of dams. Streams inhabited by the remaining fishes in this

declaration (*Percina antesella*, Amber Darter; *Etheostoma wapiti*, Boulder Darter; *Etheostoma scotti*, Cherokee Darter; and *Percina aurolineata*, Goldline Darter) will be visited during the next year as part of a long-term conservation evaluation of endangered and threatened fish habitat.

11. Because my research work has included these species, any further decline of any of these taxa would affect my current and future research.

12. My interests in these species have been, and will continue to be, harmed by the Environmental Protection Agency's failure to consult with the U.S. Fish and Wildlife Service on pesticide impacts. As a federal agency, EPA is required to consult with the U.S. Fish and Wildlife Service on any federal actions that might affect federally listed species and their critical habitat. Their failure to do so is a violation of the Endangered Species Act.

13. Without consultation with the U.S. Fish and Wildlife Service, the Environmental Protection Agency cannot understand the full environmental impacts of the pesticides that it authorizes. As a result, the Environmental Protection Agency has not taken all available steps to ensure that pesticides do not harm or kill endangered and threatened species.

14. In sum, my interest in these species ranges from purely aesthetic to research and conservation. I also believe that we have a moral obligation to protect these species from further decline and extinction. My interests are being harmed by the Environmental Protection Agency's failure to consult with the U.S. Fish and Wildlife Service on impacts of pesticide registrations on these species. Specifically, I believe that the Environmental Protection Agency's failure to follow the law makes these species more likely to suffer further population declines. If these species decline or become extinct, this loss would deprive me of the benefits I currently receive from the existence of these rare animals. Consultation with the U.S. Fish and Wildlife Service could result

in protective measures aimed at reducing impacts of pesticides on these species, which is important to ensure that my interests in these species are preserved and remain free from injury.

I declare under penalty of perjury that the foregoing is true and correct. Executed on 18 March 2019 in Gainesville, Florida.

James D. Williams PhD

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IN THE UNITED STATES DISTRICT COURT

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and

CROPLIFE AMERICA,

Intervenor-Defendant.

Case No. 4:18-CV-03197-SBA

DECLARATION OF ANDY WOOD

DECLARATION OF ANDY WOOD

I, Andy Wood, declare as follows:

1. I am over eighteen and currently reside in Hampstead, NC, where I have lived for 13 years.

2. I have a Bachelor's of Science degree in Wildlife management from Texas A&M University (1981). From 1987-2000, I served as the Curator of education for the North Carolina Aquarium at Fort Fisher and subsequently worked for 11 years as the Education Director for Audubon North Carolina. I am now director of the Coastal Plain Conservation Group, a North Carolina non-profit organization established to provide ecosystem research and habitat management, with special attention to protecting threatened and endangered species in southeastern North Carolina's longleaf pine, pocosin, and bottomland swamp forests.[1] Coastal Plain Conservation Group also purchased and manages a 10.5 acre tract of longleaf pine habitat, previously threatened with being converted entirely into horse pasture, to benefit hundreds of plant and wildlife species that comprise the community of life sharing the biodiverse longleaf pine habitat, including the red-cockaded woodpecker (*Picoides borealis*), and Carolina gopher frog (*Rana capito capito*).

3. I am also Landscape Ecologist and Community Conservation Consultant with Habitats Gardens, LLC, an environmental conservation consulting company that provides services to business and industry involved in developing and maintaining our built environments and the infrastructures that support them. In addition to my professional career I have provided nature commentaries for public radio station WHQR for more than 25 years, which were

[1] Coastal Plain Conservation Group, https://coastalplaincg.org/

compiled into the book "Backyard Carolina: Two Decades of Public Radio Commentary" published in 2008.[2]

4. Part of my research has involved research into pollution and the impacts on wildlife. For example, I led an exhaustive study of derelict fishing gear with emphasis on impacts of ghost crab pots on diamondback terrapins, a small saltmarsh turtle. One of my first assignments in the environmental field in 1970, helped document pollution from a chemical plant discharging raw waste into a Connecticut stream.

5. Since 1992, I have also led research and protection efforts to prevent the extinction of imperiled species of invertebrates and in particular, freshwater snails once found in streams and beaver ponds in southeastern North Carolina. Specifically I have studied and worked to protect the last living members of two freshwater species of snails: the magnificent ramshorn (*Planorbella magnifica*) and a related species called the Greenfield ramshorn (*Helisoma eucosmium*).

6. I have been a member of the Center for Biological Diversity since 2010. The Center is a non-profit organization committed to the preservation, protection, and restoration of native species and the ecosystems upon which they depend. As a member of the Center, I respond to action alerts and keep up with North Carolina activities. I rely in part upon the Center to represent my interests in protecting endangered species and their habitat, especially North Carolina species. I appreciate the Center's work to get wildlife protected under the federal Endangered Species Act because it provides crucial tools for the protection and recovery of endangered species.

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[2] https://www.whqr.org/people/andy-wood

7. I am concerned about the impacts of pesticides on endangered and threatened aquatic species, including the Cape Fear shiner (*Notropis mekistocholas*), and magnificent and Greenfield ramshorn snails. In addition to my concern about the impacts of pesticides to aquatic species, I am also concerned about land-based pesticide impacts to endangered plants and wildlife such as the red-cockaded woodpecker, rough-leaved loosestrife (*Lysimachia asperulaefolia*), wood stork (*Mycteria americana*), rare skipper (*Problema bulenta*), southern hognose snake (*Heterodon simus*), and Carolina gopher frog (*Lithobates capito capito*). Pesticides pose an insidious and often poorly understood threat to people, wildlife, and the habitats we share. Many pesticides are used without full understanding of their long-term impacts. Pesticides have been proven to have endocrine disrupting impacts on wildlife and people, especially when different pesticides are used in the same area or mix in a waterbody such as a retention pond, river or lake.

8. I have a deep personal and professional appreciation for all wildlife, but especially for aquatic wildlife. My work studying and protecting some of the last known populations of the magnificent and Greenfield ramshorn snail has been recognized by the United States Fish and Wildlife Service for its importance in saving the species from extinction.[3] These rare snails are on the brink of extinction – pushed out of its natural habitat by the loss of its freshwater habitat from intrusion of salt water and loss of beaver ponds. During the storm brought by Hurricane Fran that hit North Carolina's coast in 1996, I rescued as many of the magnificent ramshorn as possible from the refuge I had built in my backyard—the last place on earth the rare snail was known to exist at the time. I have created a snail sanctuary, now

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[3] One Man's Mission to Save a Magnificent Mollusk, Sarah McRae, U.S. Fish and Wildlife Service, https://www.fws.gov/endangered/news/episodes/bu-Spring-Summer2014/story1/index.html

consisting of several 300 gallon tank ecosystems, and learned how to maintain a population of ramshorns snails in captivity. While the snails have been successfully breeding in captivity, the wild population, if one still exists, has continued a slow and steady decline. A magnificent ramshorn has not been observed in the wild since 2004 and it is now believed that the snail may now only exist in captivity.

9. I live in the lower Cape Fear River basin located in the coastal plain of southeast North Carolina. I conduct research in and around the lower Cape Fear River focusing on birds, diamondback terrapins, and two critically rare freshwater endemic snails: the magnificent ramshorn and Greenfield ramshorn.

10. My work involves diligent sampling of aquatic and terrestrial habitats to confirm population presence/absence of expected or predicted species. My interest with wildlife includes the study of how species use habitats during all or part of their full life cycle, including salamanders and frogs that require aquatic habitat as nursery for eggs and larvae, and terrestrial habitat for juvenile and adult life stages. I also study the interactions of predators and their prey, including fishes and the invertebrates they eat, and birds and the fishes they eat. My work also includes study of anadromous American eels (*Anguilla rostrata*) and an eel-eating snake called the rainbow snake (*Farancia erytrogramma*) a reptile in decline due to habitat loss and decline of eels; the snake's primary prey.

11. Because I live and research in the Cape Fear River basin, I have explored many areas of the Cape Fear River, including much of the intact bottomland swamps extending from the piedmont to the coast, and intend to continue visiting those areas in the future for my personal enjoyment and professional work. I sometimes travel to the Cape Fear shiner's habitats, and I consider their habitats crucial to the integrity of the Cape Fear River and its associated

plants and wildlife they support. In addition to being important to the Cape Fear Shiner, riverine swamps provide essential habitat for the wood stork that uses Cape Fear river swamps during all or part of their full life cycle. As predators of aquatic animals negatively impacted by pesticide biomagnification, storks are especially vulnerable to consequences of pesticide biomagnification.

12. I would love to see the Cape Fear Shiner, and I have tried to observe the species. I searched for the species in its natal habitats during the early 1990s, while I was developing the storyline for an Aquarium exhibit. I knew the species was known from the areas I explored but its scarcity prevented me from finding any specimens. I intend to continue looking for the Cape Fear shiner and wood stork on my future travels in the Cape Fear river basin.

13. In addition, I regularly visit North Carolina State parks that have property in and around the range of the Cape Fear shiner, wood stork, and ramshorn snails. My visits to those parks are enriched by my knowledge that the species dwells there and I will continue to return to them in the future.

14. I am aware that agricultural activities have contributed to the decline of many native wildlife species. Agricultural activities have led to the conversion of natural habitat and resulted in elevated nutrient and pesticide levels in streams and ground water from runoff or infiltration of manure, fertilizer, or pesticides. I know that corn, soy, wheat, cotton, peanut, sweet potatoes, and hay are major crops in North Carolina and that the pesticides used on those crops can harm wildlife, including threatened and endangered species. I am concerned with the amount of pesticides used in North Carolina and the negative effects it has on wildlife and the recovery of threatened and endangered species.

15. In the future, I will continue to seek out opportunities to observe native wildlife in North Carolina, including species such as the Cape Fear shiner ramshorn snails, wood stork, red-

cockaded woodpecker, rough-leaved loosestrife, rare skipper, and southern hognose snake. My work as a conservation educator requires me to explore and observe habitats and the plants and wildlife they support in many areas in North Carolina, to help me write articles for popular and scientific journals, along with educational programs for other media including television and radio. I also lead outdoor explorations for organized groups, to introduce people to the habitats and ecosystem services they provide to the benefit of people, plants and wildlife. In short, my livelihood depends on having access to intact and healthy habitats that support wild species in their natural environments and I plan to continue visiting those natural areas in North Carolina for personal and professional benefit.

16. I am interested in threatened and endangered species from many perspectives, especially as an ecologist and educator. Much of my work as a professional ecologist and educator has to do with the lower reaches of the Cape Fear River. It is my belief that the future of endangered species, such as the Cape Fear Shiner, portends the future of species inhabiting the lower reaches river systems in North Carolina. This especially applies to Wood Stork, American Alligator (*Alligator mississippiensis*), and Bald Eagle (*Haliaeetus leucocephalus*), a species protected by the Bald and Golden Eagle Protection Act, and an apex riverine predatory species. As an educator, I lead numerous guided treks on the Cape Fear River and its tributaries Northeast Cape Fear River and Black River. Participants in these trips are enthralled by the sighting of Bald Eagle, Wood Stork, and American Alligator.

17. As an ecologist I am interested in the smaller and less glamorous species, including obscure snails and fishes. The lower trophic level species are the first indicators of health and stability of ecosystems. The Cape Fear Shiner and ramshorn snails are in a sense, "canaries in the coal mine." They are also keystone species that, combined with other related

species, provide ecosystem services from nutrient cycling in aquatic habitats, to being in turn, food for larger species that people pursue and capture for food or recreation. As an indicator of environmental health, we need to assure their long-term perpetuity if only to be sure the same environment that sustains endangered species is also healthy enough to sustain people. As an example, the plight of imperiled ramshorn snails and Cape Fear shiner tells us there is something wrong with riverine swamps that support them and us. In the case of the Cape Fear shiner, evidence suggests a direct correlation between chemical contaminants, including pesticides and fertilizers, and decline of shiner health. Other Cape Fear River keystone species include American Alligator, an apex aquatic predator of fishes, amphibians, other reptiles (turtles especially), and mammals.

18. I believe people have a responsibility to minimize our negative impacts on the environment and when our activities are shown to be detrimental to the environment we inhabit, it is an ethical responsibility for people to correct the problems we create. I feel I am as beholden to the magnificent ramshorn as the Cousteau Society is to the blue whale.

19. My spiritual connection to the environment is very personal. I have spent a lifetime exploring the natural world around me as a source of wonderment and knowledge. When species or habitats are lost, I feel the loss as a librarian might feel the loss of a book, or a reader might feel the loss of a chapter. Regardless of considerations pertaining to a Creator, as a species itself, thinking, sentient humans are smart enough to know we must protect the integrity of our planet's natural systems if we hope to survive into the future.

20. I find joy in knowing that endangered species, such as the Cape Fear Shiner, ramshorn snails, red-cockaded woodpecker, rough-leaved loosestrife, rare skipper, and southern hognose, snake still exist even when I don't have the opportunity to observe one. But if I see one

in the wild, I know I will be moved, in both a scientific and spiritual manner. As a conservation educator working to introduce people to nature outdoors, my programs are highlighted and made more meaningful when my program participants observe Bald Eagle, Wood Stork, American Alligator, and endangered species.

21. I believe humans are the single greatest change agent in respect to habitats and the ecosystem services they provide to our benefit. I believe the future of humanity is tied to the future of biodiversity because we are at the top of all major multi-trophic ecosystem food chains. We depend on wild plants and animals for our continued survival; few, if any, wild species are inextricably dependent on humans for their survival. Protecting the health and well being of ecosystems and the plants and animals that inhabit them is only a moral obligation if we have a moral obligation to protect humanity. Endangered species are an essential part of this biodiversity, and its loss would be both a moral and ethical loss.

22. For these reasons, I would be deeply saddened and harmed if the Cape Fear shiner, ramshorn snails, red-cockaded woodpecker, rough-leaved loosestrife, rare skipper, bald eagle, wood stork, American alligator, Carolina gopher frog, and southern hognose snake were to suffer further declines or even become extinct because of pesticide impacts or other threats.

23. As someone who is deeply concerned about the fate of imperiled wildlife, I am upset that the Environmental Protection Agency has refused to consult with the U.S. Fish and Wildlife Service about the impacts of pesticide registrations on endangered species. I believe that the EPA has a regulatory responsibility to investigate impacts of pesticides to the fullest of their abilities, including consulting with other agencies and organizations to learn what is known about pesticide impacts. Without consultation, the Environmental Protection Agency cannot understand the full environmental impacts of its actions or inactions. As a result of their

inaction, the Environmental Protection Agency has not taken all available steps to ensure that use of pesticides does not, or will not, harm or kill species of ecological value and human benefit.

24. In sum, I have professional, aesthetic, spiritual, and scientific interests in the preservation of the Cape Fear Shiner, ramshorn snails, red-cockaded woodpecker, rough-leaved loosestrife, rare skipper, bald eagle, wood stork, American alligator, Carolina gopher frog, and southern hognose snake, and their habitats. These interests are being harmed by the Environmental Protection Agency's failure to consult with the U.S. Fish and Wildlife Service regarding impacts of pesticide registration on these species. Specifically, I believe that the Environmental Protection Agency's failure to follow the law makes the species more likely to suffer further population declines. And if the species declines or becomes extinct, this loss would deprive me of the benefits I currently enjoy from the mere existence of these very rare animals. Consultation with the U.S. Fish and Wildlife Service could result in protective measures aimed at reducing impacts of pesticides on this species, which is important to ensure that my interests in the species are preserved and remain free from injury, as well as ensuring the interests of human health are considered and held to account.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 13, 2019, in Hampstead, NC.

Andy Wood

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